TECHNOLOGY DEPT.

JUNE 15, 1957

61-12

Telephone Engineer

AND MANAGEMENT

THE NATIONAL TELEPHONE MAGAZINE

PUBLIC LIBRARY
JUN 24 1957

FEATURING IN THIS ISSUE

- ★ **WHIPPING PLANT PERSONNEL PROBLEMS,** *by T. DeWitt Talmage*
- ★ **HOW TO IMPROVE TRAFFIC SUPERVISION,** *by Alton Steele*
- ★ **GIANT MECHANICAL WIZARD AIDS PLANT MEN,** *by George Bridges*
- ★ **OPERATING MANUAL ON "RURAL DISTRIBUTION WIRE,"** *by John S. Reed*

you don't have to-

'do-it-yourself!'

Let L. M. Berry and Company do it for you

Since the selling of directory advertising has become highly specialized, more and more telephone companies throughout the nation have turned to L. M. Berry and Company to handle their directory problems. Your worries vanish when you "Let-Berry-Do-It."

With forty-six years of experience, the Berry Organization has become expert in the field of directory advertising. A Berry Directory not only means maximum advertising revenue and the best public relations with your subscribers, but more . . .

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Give the Best Service

KOILED KORDS have proved over the years that they give the best service to subscribers and telephone companies alike.

KOILED KORDS have reduced cord maintenance and replacement to an absolute minimum.

KOILED KORDS keep their spring-like shape and last indefinitely under the toughest conditions.

KOILED KORDS are smooth, clean and cannot be harmed by moisture, grease, acid fumes or sunlight. Be sure your subscribers have the best . . . KOILED KORDS

Available from your independent telephone supplier in black and many colors to complement colored telephones.

*Koiled Kords INC., BOX K, NEW HAVEN 14, CONN.

Telephone: CHestnut 8-5515
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KOILED KORDS, THE ORIGINAL RETRACTILE CORDS, ARE THE RESULT OF 17 YEARS OF RESEARCH, DEVELOPMENT AND USE.

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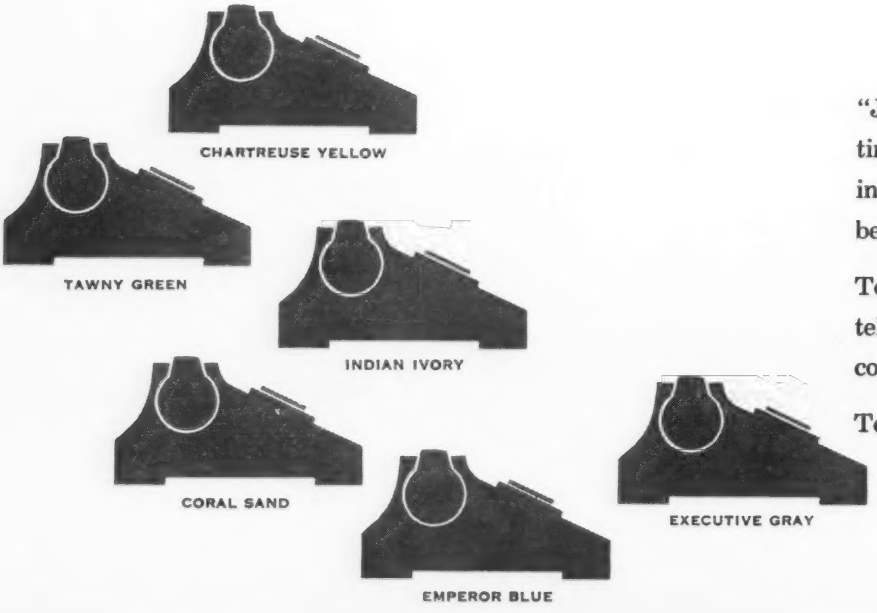
RICHLAND RED

NORTH COLOR-TONE TELEPHONES



CHARTREUSE YELLOW

TAWNY GREEN

INDIAN IVORY

CORAL SAND

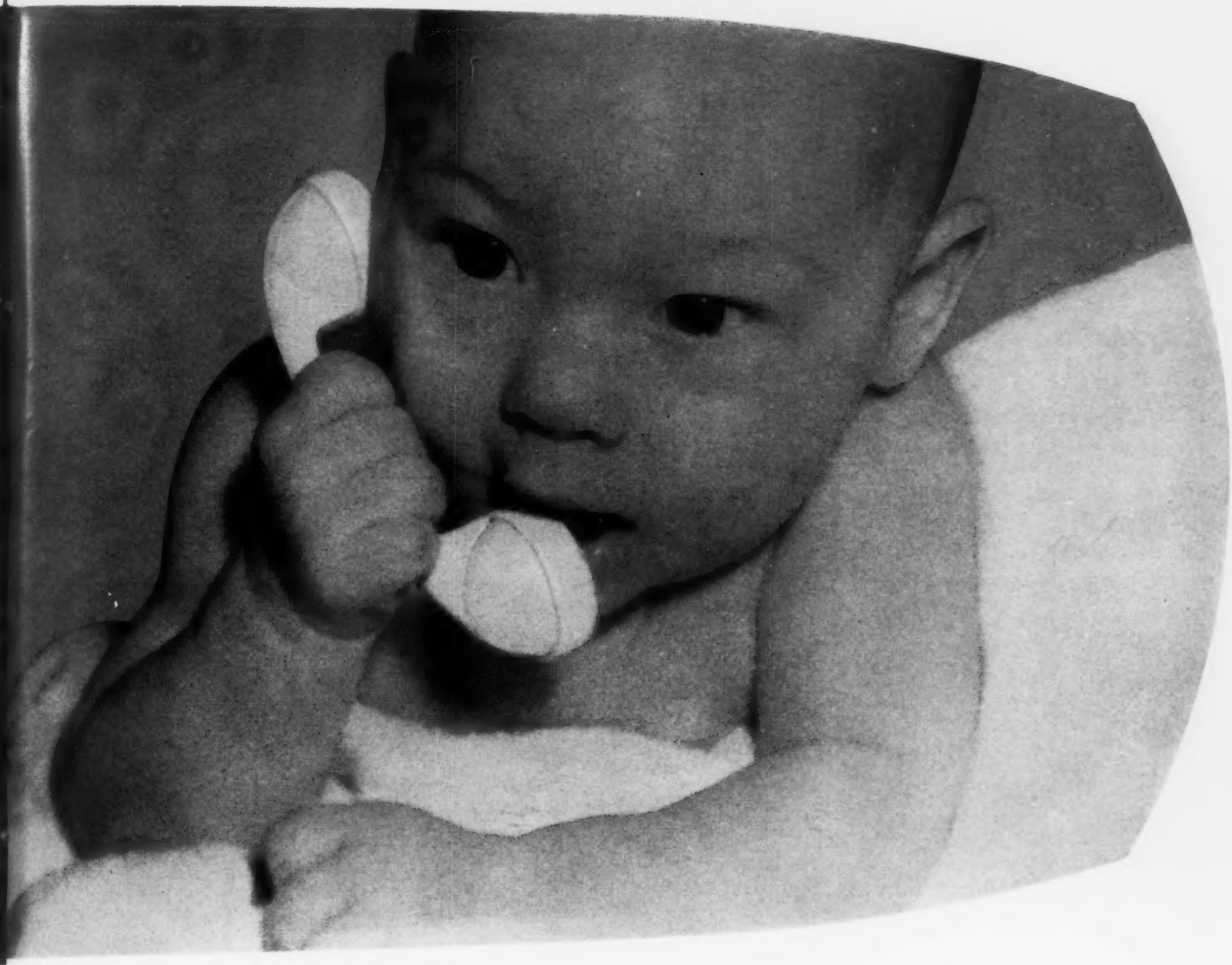
EXECUTIVE GRAY

EMPEROR BLUE

"Junior" is growing up in an age of color! By the time he grows up and orders his first telephone installed, all residential and most office phones will be in colors. But that's twenty years from now.

TODAY — thousands of subscribers want colored telephones — thousands more can be "sold" on colored telephones.

TODAY — you can order North Color-Tone tele-



ES FOR THE *Young in Heart*

phones from stock—in a choice of Richland Red, Chartreuse Yellow, Tawny Green, Indian Ivory, Coral Sand, Emperor Blue, and Executive Gray.

TODAY — when you buy North Color-Tone telephones you get merchandising aids — mailers, envelope stuffers, newspaper ad mats, counter cards, display materials—to help you merchandise Color-Tone telephones as revenue producing extensions.

The North Color-Tone telephones are the finest telephone instruments you can offer your subscribers—in transmission, in reception, in color styling!

The North merchandising program is the most powerful assistance you can get to help YOU increase your extension telephone revenue!

Write for full details or see your North sales representative.

NORTH ELECTRIC COMPANY

655 SOUTH MARKET STREET • GALION, OHIO

"Why, it's no bigger than a regular telephone!"

"It's so smart-looking, too!"

(NATURALLY, THEY MEAN AUTOMATIC'S LOUD-SPEAKING TELEPHONE)

Here's something worth remembering about Automatic's Loud-Speaking Telephone. *It's the same size and shape as our Type 80 Telephone.* No excess bulk—just a standard-size telephone and compact speaker (the control unit mounts under the desk, out of sight, and out of harm's way).

The tiny microphone is in the base of the telephone and is non-directional, so you can talk in a normal voice from any direction. That means that Automatic's Loud-Speaking Telephone can be used by a number of people in a conference, without the annoyance of handing a microphone around!

Automatic's Loud-Speaking Telephone quickly turns prospects into customers. And it's easy to install by following the simple directions supplied. To find out more, write for Circular 1857. Address:

Automatic Electric Sales Corporation, 1033 W. Van Buren St., Chicago 7. Or call HAymarket 1-4300.

AUTOMATIC ELECTRIC

A member of the General Telephone System
One of America's great communications systems

GENERAL SYSTEM

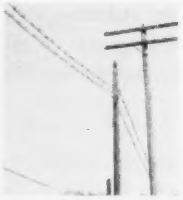
Plant Personnel Problems 33

We'll agree with the proverb that states—"Small causes give rise to great events." This is another way of saying that "little leaks sink great ships." Author Ted Talmage had these thoughts in mind when he prepared this article discussing some methods that, where applicable, may be considered for adoption by those seeking to improve operating results.

Improve Traffic Supervision 39

What makes one office work smoothly and efficiently while another office has a poor operating record? In this article the outhor points out that supervision—of the kind that builds office morale and eliminates indifferent employe attitudes—is a sure cure for the inefficient office.

Rural Distribution Wire 63



Originally designed as an answer to an urgent need in rural areas where existing facilities had to be expanded to meet growing demands for service, rural distribution wire has proved popular with telephone companies as a type of wire facility for supplementary open wire or cable. This new Operating Manual will give you complete information.

Report From England 50

In 1938 telephone engineers of the British Post Office designed and built an experimental trailer completely equipped as a small automatic exchange. Today 30 100-line MAX's and 11 200-line MAX's are in service throughout Great Britain.

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Telephone Engineer

AND MANAGEMENT

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Vol. 16 No. 12 JUNE 15, 1957

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FRONT COVER

MAY, 1957, WAS A SPECIAL PROMOTION month in Hawaii for sales of home extension telephones in color. Installation charges and change-of-instrument charges were waived for the month, and telephones were sold in food markets and department stores. Here Mrs. Sylvia Leong talks color extensions right in the middle of Foodland's Supermarket groceries and vegetables. — (Photo From Hawaiian Telephone Company.)

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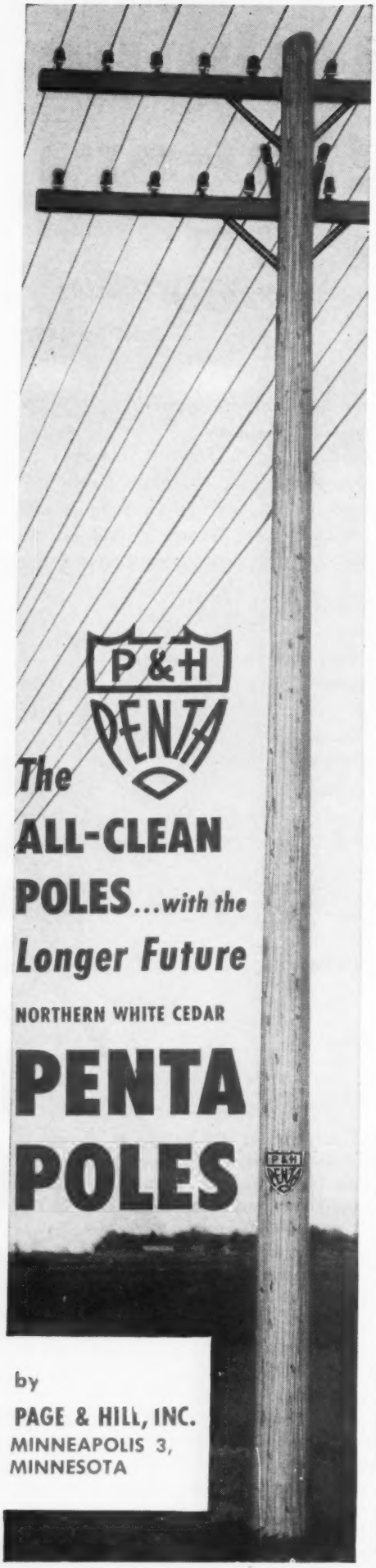


COMING CONVENTIONS

NEW YORK State Telephone Association, Scaroon Manor, Schroon Lake, June 17-19.

ALASKA Independent Telephone Association, Elks Lodge, Kodiak, Aug. 26-28.

TENNESSEE Telephone Association, Hermitage Hotel, Nashville, Sept. 12-13.

ARKANSAS Telephone Association, Arlington Hotel, Hot Springs, Sept. 16-17.

MICHIGAN Independent Telephone Association, Hotel Pantlind, Grand Rapids, Sept. 17-19.

ROCKY MOUNTAIN Telephone Association, Hotel Utah, Salt Lake City, Sept. 18-20.

WEST VIRGINIA Independent Telephone Assn., Blackwater Lodge, Davis, Sept. 30-Oct. 1.

NORTH CAROLINA Independent Telephone Association, Carolina Hotel, Pinehurst, Oct. 3-4.

UNITED STATES Independent Telephone Association, Conrad Hilton Hotel, Chicago, Oct. 14-16.

VIRGINIA Independent Telephone Association, Roanoke Hotel, Roanoke, Oct. 24-25.

SOUTH CAROLINA Independent Telephone Association, Clemson House, Clemson, Nov. 4-5.

ALABAMA-MISSISSIPPI Telephone Association, Thomas Jefferson Hotel, Birmingham, Nov. 11-12.

GEORGIA Telephone Association, Radium Springs Hotel, Albany, Nov. 13-14.

OKLAHOMA Telephone Association, Huckins Hotel, Oklahoma City, Nov. 21-22.

FLORDIA Telephone Association, The Balmoral, Miami Beach, Dec. 2-3.

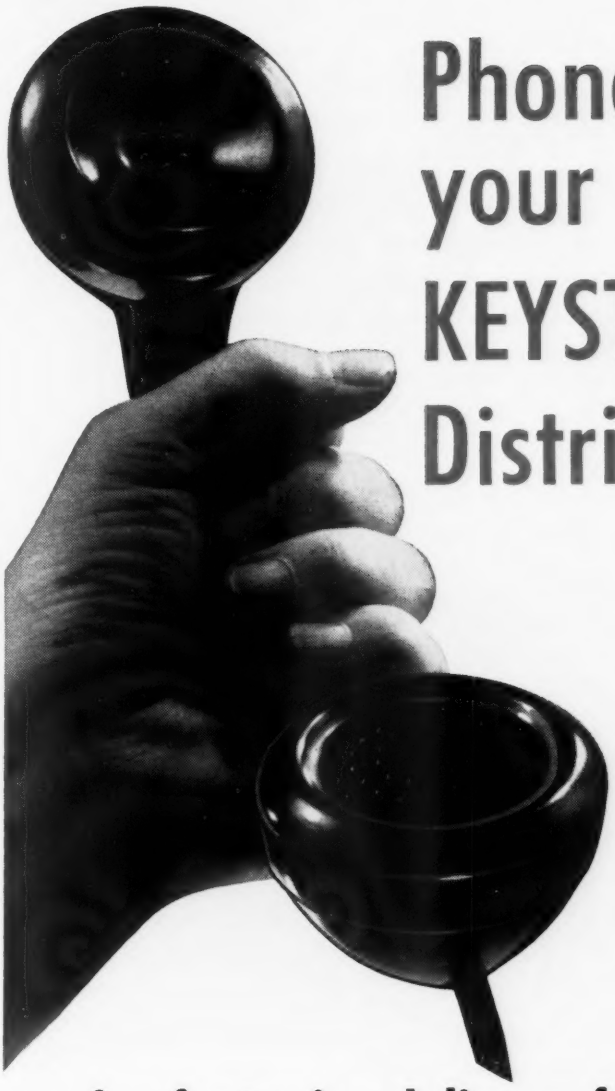
LOUISIANA Telephone Association, Jung Hotel, New Orleans, Feb. 12-13, 1958.

MINNESOTA Telephone Association, St. Paul Hotel, St. Paul, Feb. 17-19, 1958.

TEXAS Telephone Association, Baker Hotel, Dallas, March 3-4, 1958.

KENTUCKY Telephone Association, Phoenix Hotel, Lexington, March 4, 1958.

IOWA Independent Telephone Association, Hotel Fort Des Moines, April 8-9, 1958.



Phone your KEYSTONE Distributor

British Ropes Canadian Fact., Ltd.
Vancouver, B. C., Canada

Crescent Electric Supply Company
Dubuque, Iowa
Burlington, Iowa
Cedar Rapids, Iowa
Davenport, Iowa
Madison, Wisconsin
Mason City, Iowa
Ottumwa, Iowa
Peoria, Illinois
Quincy, Illinois
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New York, New York
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Oklahoma City, Oklahoma
Omaha, Nebraska
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Line Material Company
Milwaukee 1, Wisconsin

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Winnipeg, Manitoba, Canada

The Mine & Smelter Supply Co.
Salt Lake City, Utah

Nelson Electric Supply Co.
Dallas, Texas
Lubbock, Texas

Jack Pruzan Co.
Seattle, Washington

Southern Electrical Corp.
Chattanooga, Tennessee

Suttle Equipment Company
Lawrenceville, Illinois

Wheeler Lumber Bridge & Supply Co.
Norfolk, Nebraska

. . . for fast wire delivery from stock

When wire is needed, call your Keystone Wire Distributor. His stocks are well supplied. He can give you prompt delivery in any emergency.

Keystone Telephone Wire is available in a full range of Class A line wire in 50M, 85M, and 135M tensile strengths, and meets the specifications of A.S.T.M., A.T.&T. and is approved by R.E.A. Galvanized bond, tie and construction wire are also available at your Keystone Distributor.

A phone call will bring you fast delivery . . . contact your nearest Keystone Distributor for your next wire need!

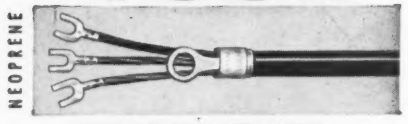
KEYSTONE STEEL & WIRE COMPANY, Peoria 7, Illinois

KEYSTONE
Wire for the Telephone Industry

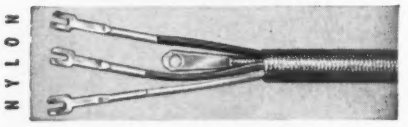
. . . by the makers of famous Red Brand Fence

CORDS BY Runzel

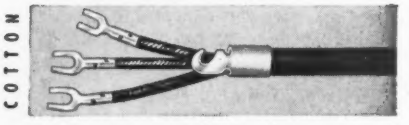
YOUR



BEST



BUY!



Are you familiar with the features of these fine cords?

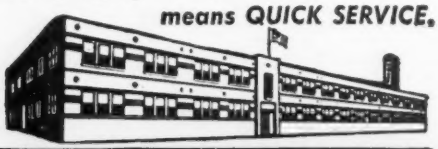
NEOPRENE covered cords are a highly serviceable cord, extensively used in a wide variety of services. They are moisture and grease proof . . . easy to keep clean.

NYLON covered cords are a relatively new development in telephone cords. Their fine smooth texture makes them the preferred cords for switchboard use. They give long service. Preferred by operators because of their fast, easy handling.

COTTON cords are in standard use everywhere. Their fine woven wrap makes them very serviceable for all around purposes.

Take your choice—Neoprene, Nylon or Cotton. They're all high quality cords made in accordance with Runzel high standard of quality. We carry a large stock of cords for every purpose.

Our geographical location means QUICK SERVICE.



RUNZEL
Cord and Wire Co.
4723 W. MONTROSE AVE.
CHICAGO 41, ILL.

FREE LITERATURE

This feature of "Telephone Engineer and Management" helps you get up-to-date technical bulletins, catalogs and literature. To obtain your copies write Reader's Service Department, 7720 N. Sheridan Rd., Chicago 26, Ill.

Pipe Pusher

LITERATURE from Greenlee Tool Co. describes the one-man operated hydraulic pipe pusher. Unit eliminates extensive ditching, tunneling, backfilling, tamping and repairing.

Splicing Methods

BOOKLET describing approved methods for splicing plastic communications cable has *been* released by Minnesota Mining & Manufacturing Co.

Spring Construction Supplies

CATALOG from North Electric Co. illustrates and describes construction materials and supplies. Catalog is conveniently indexed and key-tabled for easy use.

Supply Catalog

CATALOG from Stromberg-Carlson Co. describes thousands of telephone supply items.

Tool Guide

POCKET Tool Guide No. 100 (T-E-M) describes complete line of tools for linemen and is packed with helpful data.

Tools

CATALOG pages from Seymour-Smith describe tree pruners, fast cutting pruning saws, and the No. 20 pole saw head.

Truck Body

BULLETIN No. 941 (T-E-M) from York-Hoover Corp., describes the new YLW-96 body with hydraulic derrick and digger. Unit is designed for 2-man operation.

Wire & Cable

LITERATURE from Phelps Dodge Products Corp. describes complete line of paper and plastic insulated telephone wire and cable.

"School-To-Home Service"

LITERATURE from Executone, Inc., reports the experiences of many Bell and Independent companies prove that one of the best ways to sell School-to-Home service is to demonstrate the equipment to the top school administrator and his staff.

When the superintendent, principals, special education supervisors and home teachers are brought together to see a demonstration at the same time, an early favorable decision frequently results. In addition to showing how the service supplements the home teacher and brings the shut-in into contact with the regular class, the demonstration invariably stimulates discussion.

By answering questions with the aid of a new *Question and Answer* folder, the representative can overcome resistance and dispel misconceptions. Following this, he can suggest several experimental installations at the elementary, junior and senior high school levels on the basis of which future policy toward the service can be determined.

Pipe Marking Materials

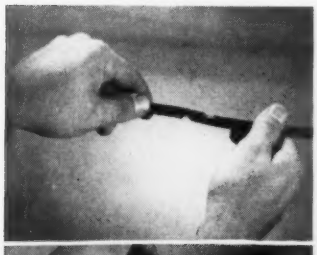
"HOW TO SELECT the Best Self-adhesive Pipe Marking Materials" is the theme of a new eight page catalog which describes over 500 self-adhesive Vinyl plastic pipe markers.

TWO GREAT NEW PRODUCTS..

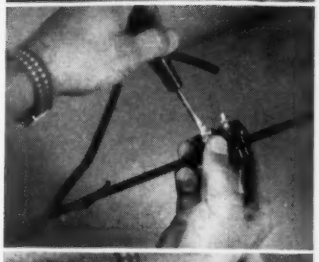
SUPERIOR TERMINAL

SUPERIOR Parallel LINE WIRE

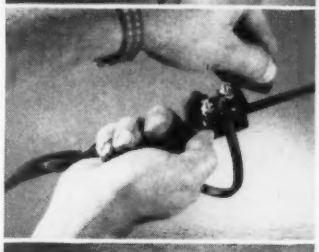
Easy Installation of
SUPERIOR PLWT-1 TERMINAL



Skin line wire insulation.



Fix terminal in place on line wire.



Connect drop wire.

Snap on neoprene terminal cover.

These two great *new* products of the Superior Cable Corporation are closely matched for long life, ease of installation and economy.

The new SUPERIOR PLWT-1 TERMINAL is of an exclusive design . . . is weatherproof and is self-supporting on the line wire. Provides positive and continuous contact of conductors at the point of take-off. Simplifies drop line connections.

New SUPERIOR Parallel Line Wire is completely insulated with high grade polyethylene . . . available with one pair of 12 or 14 gauge copperweld or .083 inch galvanized special steel wire conductors.

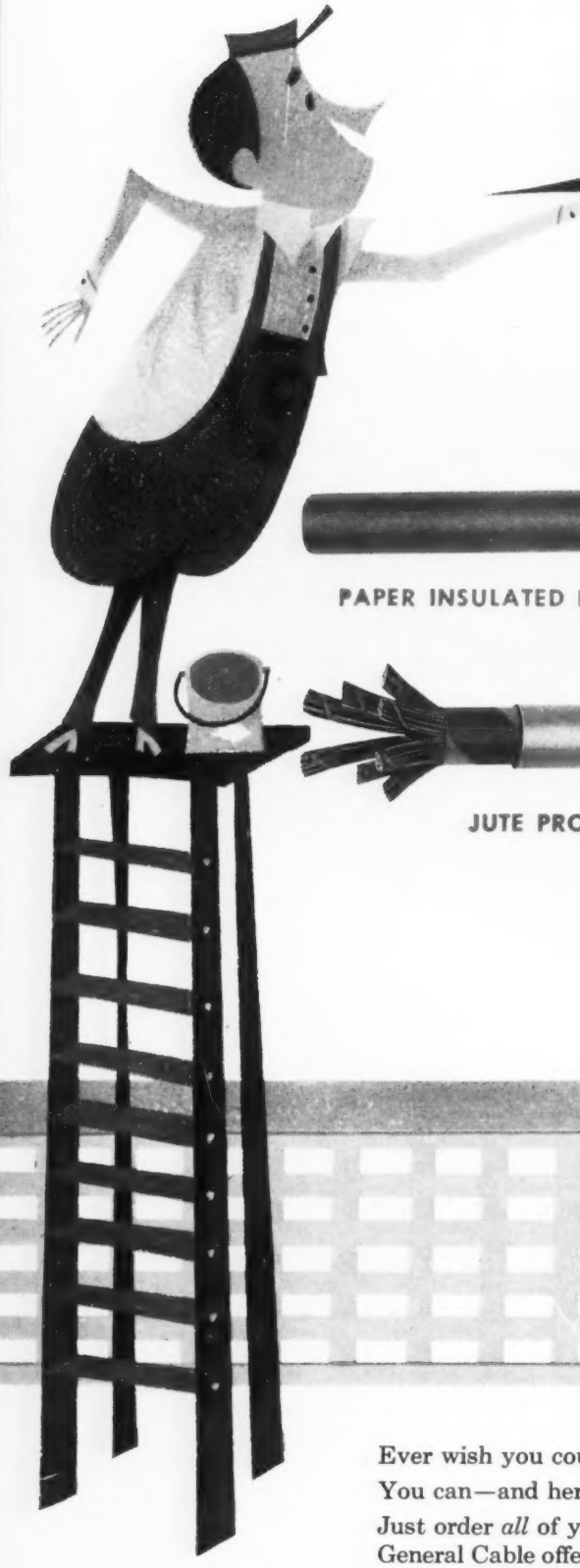
The outstanding self-supporting characteristics and low attenuation of SUPERIOR Parallel Line Wire make possible long drop runs to serve subscribers distant from the main pole line at minimum cost. Use in place of open wire for greater economy and efficiency.

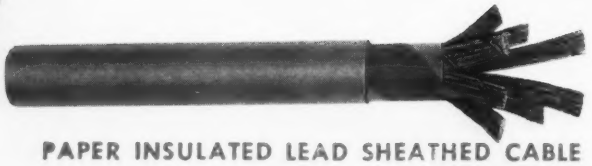
For detailed specifications, write

SUPERIOR CABLE

SUPERIOR CABLE CORPORATION
Hickory, North Carolina

General gives you biggest selection QUALITY





PAPER INSULATED LEAD SHEATHED CABLE

SUPERTEL TYPE VII DIRECT BURIAL CABLE

JUTE PROTECTED CABLE

SUPERTEL TYPE III AERIAL CABLE

ORDER FROM AUTOMATIC NOW

Ever wish you could *simplify* this business of ordering cable?

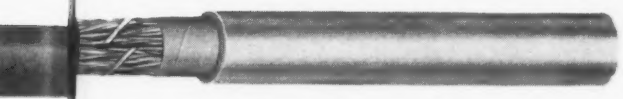
You can—and here's how.

Just order *all* of your cable requirements from General Cable, thru Automatic Electric. General Cable offers you the most complete line of quality telephone cables in the industry. You send one order, to one source—get one shipping date and one invoice.

We're always happy to help you every way possible. You can order cable, wire, and *all* your supplies from your friendly Automatic Electric representative or your nearest A. E. Sales Corporation warehouse.

...of
...TY CABLE

STEEL TAPE ARMORED CABLE



TEXTILE TERMINATING CABLE

...NOW FOR QUICK DELIVERY

PAPER INSULATED LEAD SHEATHED CABLE
Available in all standard exchange, quadded and composite types.

SUPERTEL TYPE VII DIRECT BURIAL CABLE
Armored with 2 aluminum tapes, tough, polyethylene jacket overall.

STEEL TAPE ARMORED CABLE
For direct burial where maximum protection from mechanical injury is required.

JUTE PROTECTED CABLE
For direct burial where favorable soil conditions exist.

SUPERTEL TYPE III AERIAL CABLE
Weighs less than half as much as lead cable. Economically replaces multiplicity of open wires.

TEXTILE TERMINATING CABLE
Available in 101-606 pairs, 22 A. W. G., standard color codes.

Available Soon—Alpeth and Stalpeth Plastic Sheathed Cable

Automatic's 5 friendly warehouses:

George Ferguson, Mgr.	"Michie" Hester, Mgr.	Ed. J. Chok, Mgr.	Fran Batcher, Mgr.	Gene Martin, Mgr.
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Chicago 7, Ill.	Richmond 21, Va.	Portland 10, Ore.	Johnson City, N. Y.	Kansas City 8, Mo.
HAymarket 1-4300	Tel. 6-9280	CApital 3-7244	Binghamton 7-8507	HArrison 1-4720

AUTOMATIC ELECTRIC

A member of the General Telephone System
One of America's great communications systems

GENERAL TELEPHONE SYSTEM

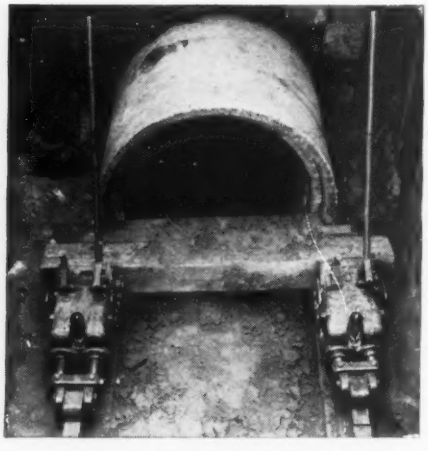
FAST, EASY WAY

TO INSTALL PIPE...

AT LOWER COST

PUSH PIPE UNDERGROUND WITH A GREENLEE HYDRAULIC PUSHER

Here's the simple, cost-cutting way to install underground pipe. Speed your jobs with a GREENLEE Pusher. One-man operated, portable, simple to operate. No tearing up of pavement . . . eliminates extensive ditching, tunneling, backfilling, tamping, repaving. Cuts job time to a fraction. GREENLEE Hydraulic Pipe Pusher often pays for itself on first job. Two sizes — model shown above for pushing 3/4" to 4" pipe. Larger unit, below, for pipe over 4", concrete sewer pipe and large drainage ducts. Power pump (as shown above) also available for extra ease and speed of operation.



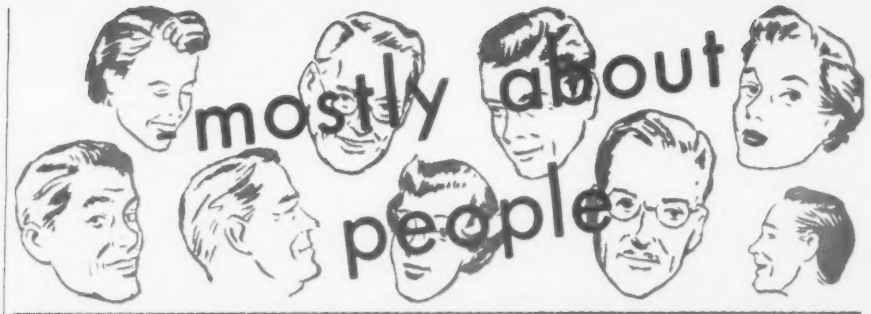
TOOLS FOR CRAFTSMEN

GREENLEE

Write today for descriptive literature.

GREENLEE TOOL CO.

2006 Columbia Ave., Rockford, Illinois



ACROSS THE EDITOR'S DESK

Sam Tucker

JUNE 1 was a momentous day for *Sam Tucker* of Pleasanton. Kansas. His 50 years of service to the Independent telephone industry was observed by an open house of the Pleasanton exchange which he and close relatives purchased in 1907. Sam is now 84 and has enjoyed an illustrious career in our industry as he served for 17 years as a member of the board of USITA and for 21 years was president of the Kansas Telephone Association, according to the May 30 edition of the *Fort Scott Tribune*. Clyde Tucker has been manager of the company since 1947 but he has served as president most of his life. The company now serves close to 1500 customers.

James H. Kellogg

JAMES H. KELLOGG, for many years president of the Kellogg Switchboard & Supply Co., Chicago, and before that an employe of the company during his business life has moved his family from the Chicago area where they had spent much of their lifetime. Jim is now president of the Charles T. Brandt, Inc. of Baltimore, Md. and will live in that area. The company he now heads is a contract manufacturer of sheet steel and metal products. Jim was a very popular manufacturer in the Independent segment of the telephone field and has legions of friends all over the world. We join with all of them in wishing success and tranquility to an old and dear friend!

New Secretary

WANT TO READ an interesting Newsletter? Get Member Copy #4-57 from the Nebraska Telephone Association edited by F. M. Strasser, who retired as sceretary-treasurer of that group on May 31. To those of us in the profession Fred's swan song was a honey — newsy, informative and evidently written from the heart. Earl Nelson, the new secretary took over June 1. Fred Strasser has finished 45 years of service to the industry and is looking forward to doing the things he had planned for his retirement when he finished his assignments with the Lincoln T&T.

"Thanks For Your Letters"

WE ARE VERY happy to have the nice letters many of you have written recently after receiving the 1957 issue of our *Catalog Directory of Industry Suppliers*. Our Editorial Staff for this yearly book, under the able direction of *John G. Reynolds*, Editor of that issue, really appreciates your taking time to write.

"Taps"

TAPS for: William O. McOmber, 61, wire chief of the Crete, Nebr. exchange; Guy O. Seaton, 70, Lincoln, Nebr.; W. H. Spurlock, 67, Lincoln, all during April, 1957. Each had served the Lincoln Tel. & Tel. Co. During May another veteran of the Lincoln company succumbed, Bert R. Overcash, 72.

Al Lew

AT THE recent joint annual convention of the Missouri Telephone Association and the Kansas Telephone Association held at the Town House in Kansas City, Kans. the officers and directors of the two associations voted to hold their 1958 meeting at the same hotel — making its fourth convention in a row at the Town House.

We want to add our congratulations to *Al Lew*, the very hospitable manager of the Town House.

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Lorain Dry CEMF Cells are selenium covered metal plates, specially treated so their internal resistance decreases rapidly as the current flow through them increases, making them effective as voltage regulators. The amount of voltage drop is determined by the number of plates connected in series. Bulletin 176 lists representative sizes; assemblies to meet individual specifications are readily made to order. Specific recommendations will be made upon receipt of the current and voltage limits to be met, and the preferred mounting arrangement.

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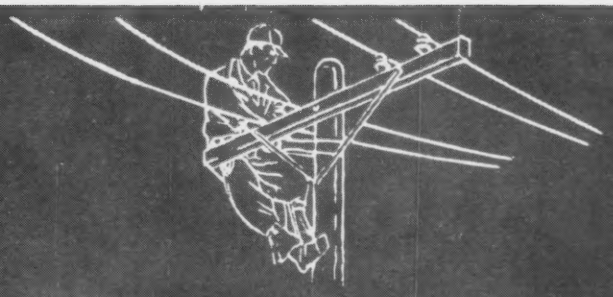
INDUSTRY NEWSLETTER



Carolina Tel. & Tel. Selects Top Officials

FOUR telephone company executives were elected to top positions last month at the regular quarterly meeting of the board of directors of Carolina Telephone & Telegraph Co., Tarboro, N. C.

J. R. Porter, one time president and immediate past chairman of the board, was elevated to the position of honorary chairman of the board. L. W. Hill, president of the firm since 1945, was elected as chairman of the board while H. Dail Holderness, former vice president, secretary and treasurer, was elected president. J. R. Fowler, former assistant secretary and assistant treasurer, was elevated to the position of secretary and treasurer.

Honorary Board Chairman, J. R. Porter, began his telephone career in 1900 with the Cumberland Telephone Co., a small Independent company which was later purchased by Southern Bell Telephone & Telegraph Co.

In 1918, he joined Home Telephone & Telegraph Co., an Independent company, which had its headquarters at Henderson, N. C. He was general manager of that company from 1918 until that company merged with Carolina Telephone & Telegraph Co. in 1926, when he became executive vice president of the merged company.

In 1940, Mr. Porter became president of Carolina Telephone & Telegraph Co. succeeding George A. Holderness. He served in that capacity until 1945, when he was elevated to the position of chairman of the company's board. Mr. Porter has remained active in the affairs of the telephone company as chairman of the board.

Mr. Hill became president of Carolina Telephone & Telegraph Co. in 1945 and has served as the company's president during a period that has seen the company grow from a $10,000,000 to a $70,000,000 corporation.

At the end of 1945, the company had less than 50,000 telephones. Today, it has in excess of 145,000 telephones in its forty-one county operating territory.

A native of South Carolina, Mr. Hill graduated from the University of South Carolina with a B. S. degree in 1915. Continuing his studies, he later received a degree in Civil Engineering. Upon graduation from college, he entered the service of Southern Bell Telephone & Telegraph Co., where he served approximately one year until he entered the United States Army in 1917.

Entering the army as a private in the Signal Corps, Mr. Hill later transferred to the air service, completed necessary tests as a pilot and was commissioned with the rank of Second Lieutenant.

Following military service, Mr. Hill returned to the employ of Southern Bell where he served in various capacities in the engineering and plant departments of that company until 1943.

On August 13, 1943, Mr. Hill was elected operating vice president of Carolina Telephone & Telegraph Co., a position he held until his election as the company's president in 1945. His 12 year tenure in that office has been the longest ever served in that capacity for the Carolina company.

The new president of Carolina Telephone & Telegraph Co., Haywood Dail Holderness is the son of the late George A. Holderness, founder and past president of the company.

A native of Tarboro, Mr. Holderness has been vice president, secretary and treasurer of Carolina Telephone & Telegraph Co. since 1945.

He is a graduate of the class of 1930 at the University of North Carolina where he received an A. B. degree, and of the Wharton School of Finance at the University of Pennsylvania where he received his M. S. degree in business administration.

Mr. Holderness began his telephone career in 1933 as a clerk in the company's traffic department. He later became traffic manager of that department and was transferred subsequently to the treasury department as assistant treasurer. A year later, in 1937, he was made secretary and treasurer of that department and in 1945, became vice president, secretary and treasurer of the company.

Mr. Fowler has been assistant secretary and assistant treasurer of Carolina Telephone & Telegraph Co. since April 1, 1957.

Policy Decisions

FACED WITH the first of what are expected to be numerous policy decisions in connection with the Bell System's proposed tariffs covering the lease and maintenance of private radiotelephone systems, the Federal Communications Commission has ruled against the positions of intervenors in the case who wish to have

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Chicago	Detroit	Los Angeles	(Maspeth, L. I.)	Rochester	

the FCC alter the issues to be taken up to include several questions not now among the issues in the proceeding.

As a result, the way was clear for an early start of hearings, and the Commission has taken a preliminary position on some of the matters surrounding the lease-maintenance case.

The whole thing stems from last year's consent decree in the antitrust case involving the Bell System, in which the Bell System was barred from engaging in non-regulated activities. As far as private mobile telephone is concerned, the Bell companies were given a sort of a five-year amortization period for existing systems.

Manufacturers and suppliers of private mobile telephone equipment and services competing with the Bell companies immediately took the consent decree as a decision that the Bell firms were out of this business. The Bell companies, however, have taken the view that lease-maintenance is clearly a common carrier service subject to regulation, and have been upheld in that view by the California Public Utilities Commission. Subsequently, the American Telephone & Telegraph Co. Long Lines Department filed tariffs with the FCC, in effect raising the same question for decision at the federal level.

After the FCC set the matter for hearing (in two parts, with the jurisdictional question to be decided first; then, if the FCC decides the service is a common carrier offering over which it has jurisdiction, it will study the reasonableness of the tariffs themselves) the Petroleum Industry Electrical Association and Motorola, Inc., asked for broadening of the issues.

PIEA requested that the applicability of section 311 of the Communications Act, dealing with maintenance of competition in the international communications field, be considered. On this score, the FCC merely pointed out that the section applies entirely to international cable and radiotelegraph service, and that the tariffs at issue involve only domestic service.

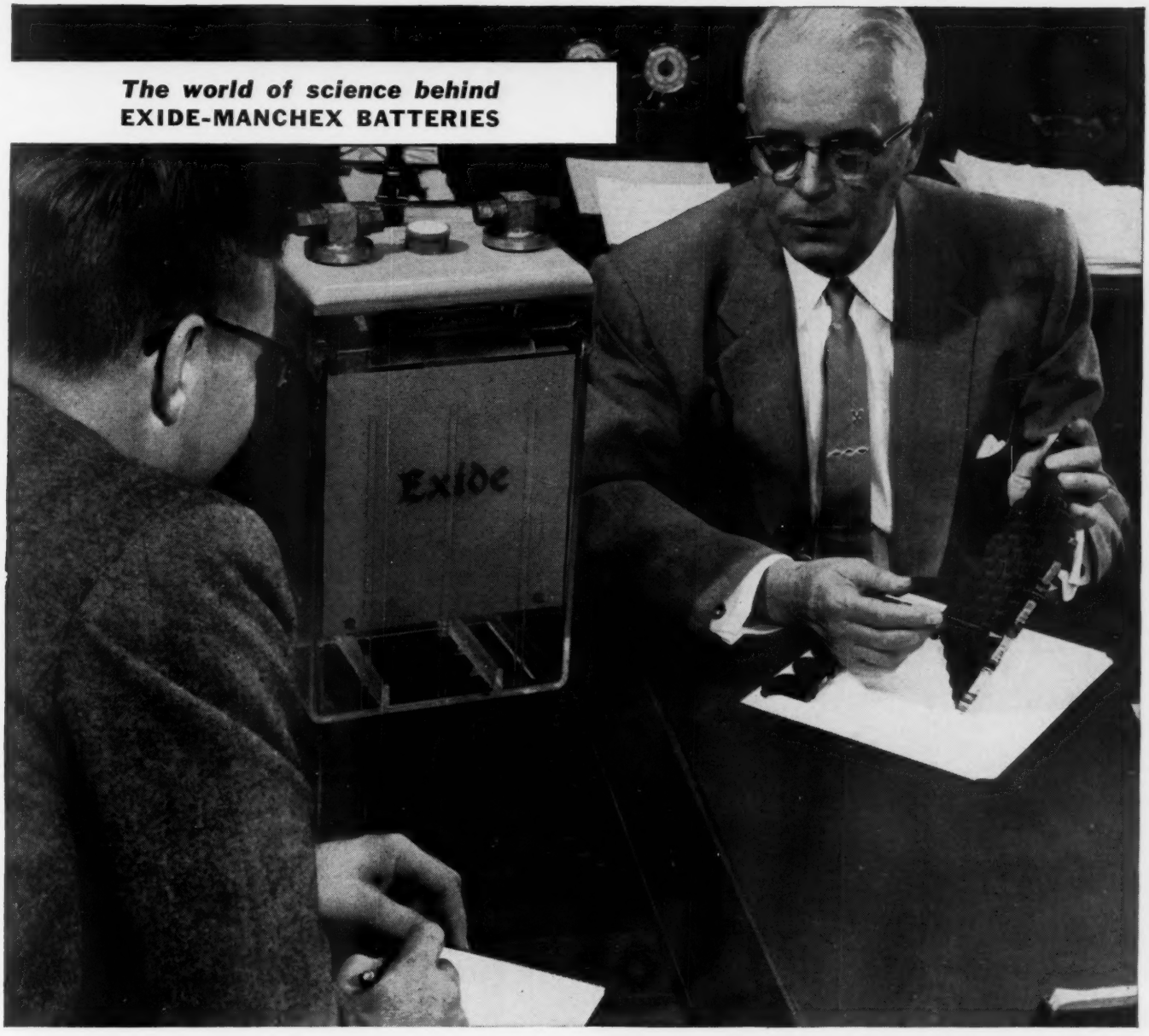
The petroleum group also sought to put in issue the question of whether the lease-maintenance tariffs violate the consent decree.

Denying this request, the Commission said it appears that PIEA contending that the judgment bars AT&T from engaging in the lease-maintenance service, "regardless of whether such service may be subject to regulation under the Communications Act as a common carrier communication service. Assuming that we are correctly construing PIEA's proposed issue, we are unable to find any basis in the specific language of the judgment which might support this contention.

"If the intent of the judgment is to bar AT&T and its subsidiaries from engaging in lease and maintenance activities, even though such activities are regulated, then it would appear that appropriate measures should be taken in the District Court which entered the decree to effect a clarification or rectification of the matter."

Motorola raised the question as to whether, if the FCC finds the lease-maintenance tariffs are appropriate under its common carrier regulation, it might not run into conflict with the radio licensing part of the Communications Act, which requires licensees to maintain control over their stations. The FCC agreed that this is a good question, but said it is more appropriate for the second phase of the hearings.

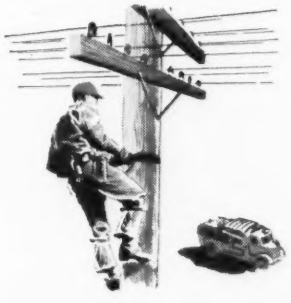
The world of science behind
EXIDE-MANCHEX BATTERIES



Being interviewed is L. E. Wells, Director of Engineering

"The reserve lead stretches battery life"

At the Exide Laboratories—**Reporter:** You're pointing to the lead buttons in an Exide-Manchex positive plate, aren't you?



Wells: That's right. And only a very small portion of the lead is activated when the battery is made. The rest is left in reserve.

Reporter: Why do you provide this reserve lead?

Wells: To keep the battery young. As long as this reserve is there, an Exide-Manchex Battery works just as well as when it comes from the factory.

Reporter: Is that why the battery lasts so long?

Wells: Yes, and there are Exide-Manchex Batteries in use today over 20 years old with years of life left.

Reporter: Don't other batteries have a reserve lead supply?

Wells: Yes, but the reserve lead must support a plate. When it gets too thin, sometimes the plate disintegrates. The Exide-Manchex buttons are supported by a special grid that doesn't disintegrate. The reserve lead can be completely used without weakening the plate structure.

Reporter: Obviously this is an important feature in the Exide-Manchex Battery.

Wells: Yes it is, but just one of many engineering details that contribute to their long life.

Note to battery users: When you order batteries for float or cycle service in stationary applications, be sure to specify Exide-Manchex. Write for detailed bulletin. Exide Industrial Division, The Electric Storage Battery Co., Philadelphia 2, Pa.

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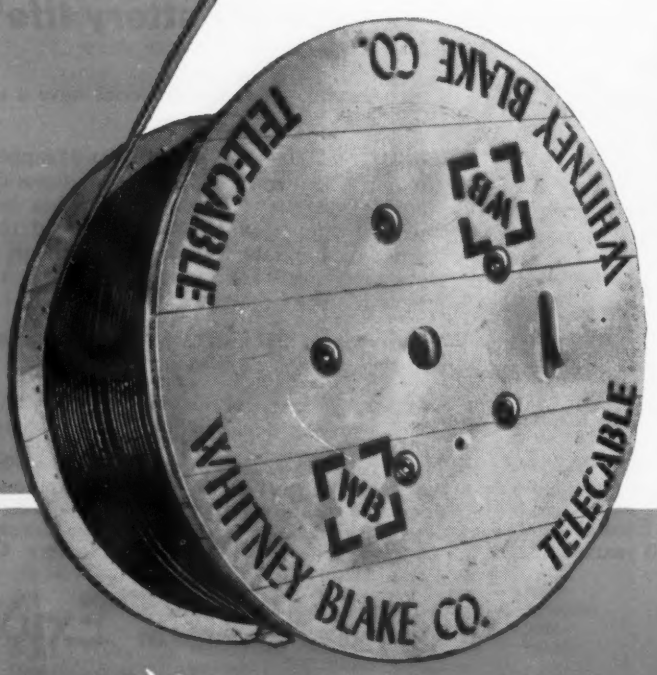

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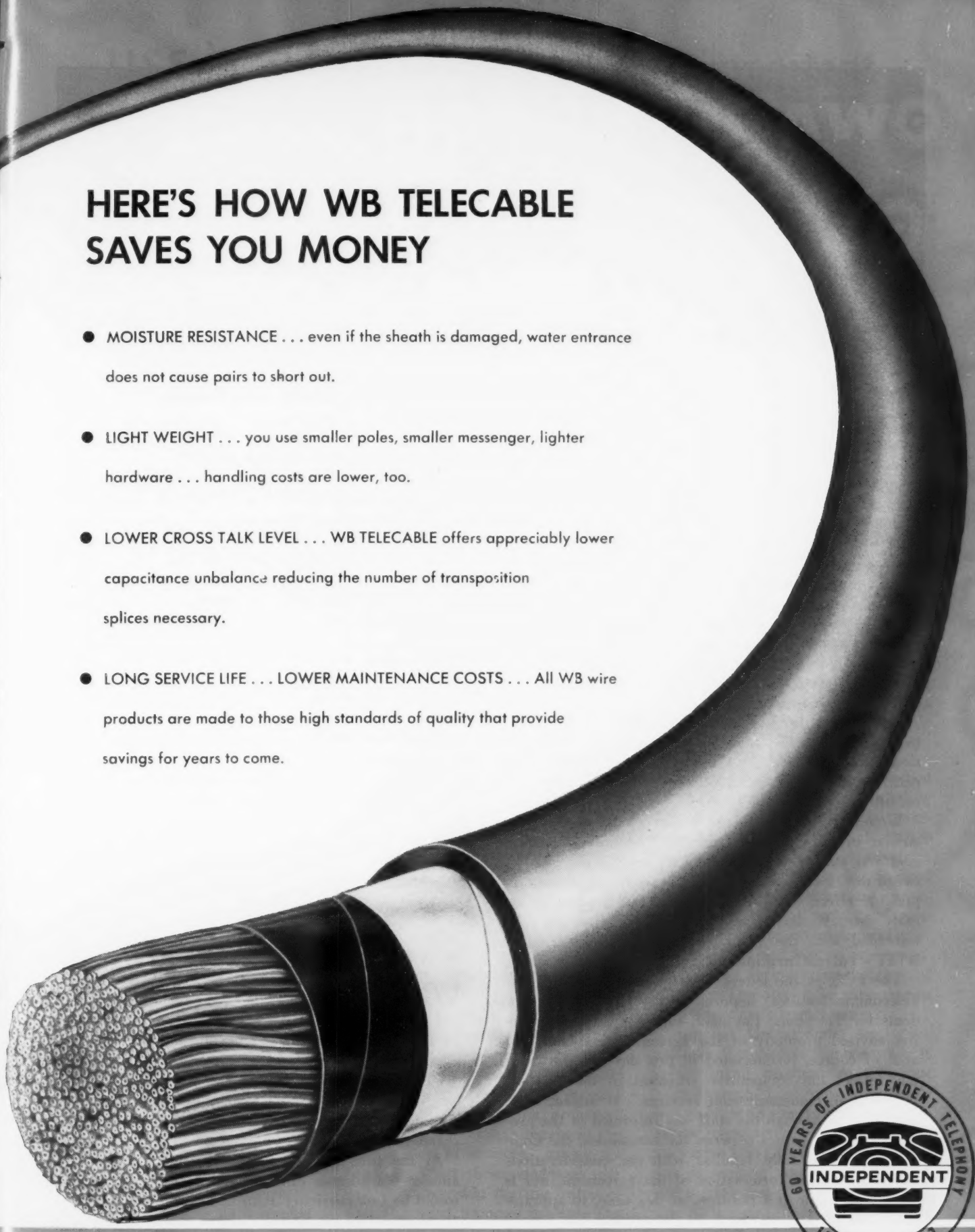

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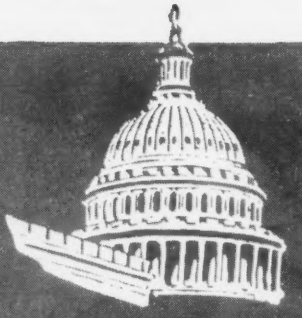
WASHINGTON NEWSLETTER



New Agreement

AGREEMENT in principle between the American Telephone & Telegraph Co. and the Western Union Telegraph Co. under which Western Union will act as agent in selling telephone company private line services arranged for alternate record and voice use, where the station equipment for non-voice communication is not furnished by the telephone company, has been made public.

First public disclosure of the agreement came when Federal Communications Commission letters to AT&T and Western Union, acknowledging receipt of communications from the two companies about the agreement, were placed in the Commission docket in its pending private line investigation, along with the communications from the two companies.

As expressed by AT&T, "it is expected that this agreement will resolve the issues presently before the Commission in (the private line) dockets regarding the competitive effects of the telephone company multiple channel offering on Western Union."

Western Union President Walter P. Marshall made similar comments, and added that "Accordingly, when contracts and operating procedures are worked out between the two companies and the agency agreement is put into effect, which it is expected can be done at an early date, Western Union plans to withdraw its protest filed with the Commission" last August against AT&T's current multiple channel offering.

The FCC, in the letters first reported exclusively in Telecommunications Reports, Washington correspondents for Telephone Engineer, said it "appreciates being advised promptly of the agreement reached . . . and, of course, is interested in this development as it may affect the competitive situation in the field of private line communication services." It added, however, that "Although the staff was informed of the progress of the meetings between the companies, the Commission is not fully familiar with the considerations entering into the formulation of the agreement, nor is the Commission in a position, at this time, to appraise the effect of the agreement on competition."

Formal hearings in the FCC's private line investigation — instituted after the initial multichannel case, in which Western Union protested AT&T's offering of a "volume" or "package" rate for multiple private line services, with rates going down as the volume of services provided and the distances increased — have been in suspension pending efforts by the two companies, in response to letters from the Commission last fall, to narrow the competitive issues involved.

AT&T Assistant to President E. B. Crosland declared in his company's letter that "Under this agreement, Western Union may act as agent in selling those telephone company private line services which are arranged to be used alternately for telephone and other types of communication — such as teletypewriter, telephotograph, facsimile, or data transmission — where the station equipment for non-voice communication is not furnished by the telephone company. Western Union will receive a commission as compensation for its sales and promotion services. The agency is non-exclusive, that is, it in no way restricts the telephone company from promoting and selling its own services.

"This sales agreement permits Western Union to sell to its customers a complete range of facsimile, data transmission, and similar services requiring telephone grade channels with alternate use of the channels for telephone communication. This is expected to benefit the users of the private line services by insuring the advantages of the Bell multiple channel offering and by making the alternate use feature of the Bell offerings available through either of the independent common carriers."

New FCC Chairman

CHANCES are pretty good that by the time this magazine reaches its subscribers, the identity of the central characters in one of Washington's biggest recent guessing games, the new Chairman and the new Commissioner of the FCC, will be known.

The guessing started when it became clear that incumbent FCC Chairman George C. McConnaughey, whose term expires June 30, would not be available for reappointment.

At the time of writing, it was pretty well agreed among Washington observers that the new Chairman would be Commissioner John C. Doerfer, the Eisenhower administration's first appointee to the Commission. Mr. Doerfer, former Wisconsin Public Service Commission Chairman, has been serving on the FCC since 1953.

Out in the lead in speculation for the new Commission member, for a seven-year term to succeed Mr.

USS COR-TEN Steel Hardware important to expanding utility facilities

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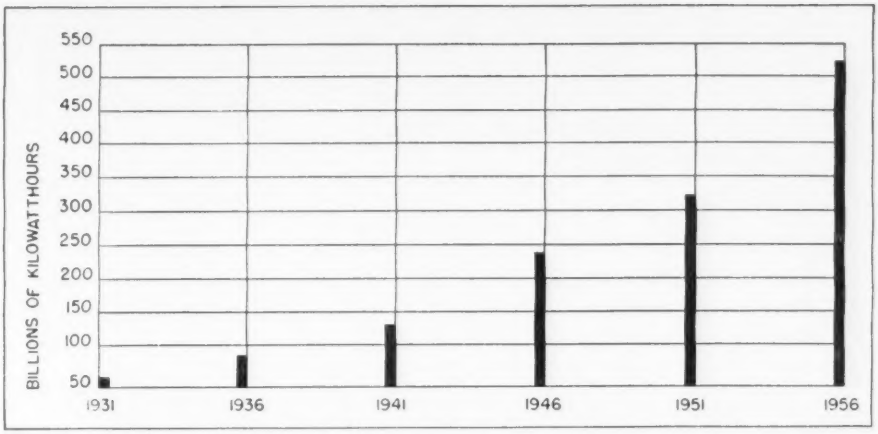
- **Extended service results from excellent corrosion resistance and higher yield point**



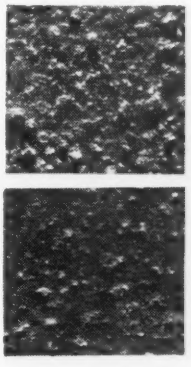
Annual sales of electricity by all utilities, both public and private, to ultimate consumers over the past twenty years. Figures are in billions of kilowatt hours.

Electrical consumption, both industrial and public, has been moving upward in strides that resemble the pace of a giant in seven-league boots. Atomically generated electricity is a reality. New and expanded generating facilities are coming into use all over the country. The eye-bugging *500-billion kilowatt hours* of electricity sold in 1956 looks like a figure reserved for astronomical tabulation. The telephone industry, too, is enjoying phenomenal growth—with new installations running at a rate of 2,000,000 units a year. The growth of these two industries calls for a great deal of transmission-line expansion.

New Lines

In establishing new lines, one important step can be taken that will cut future pole-line maintenance to the bone. That step is the specification of galvanized USS COR-TEN Steel Pole Line Hardware. That's because COR-TEN Steel's excellent resistance to atmospheric corrosion and its greater strength make it an ideal material for pole line application. In a direct comparison with plain carbon steel, COR-TEN Steel shows a *50% higher* yield point plus a resistance to atmospheric corrosion that is *four to six times* that of carbon steel. Here's how this translates into terms of service: in the corrosive atmosphere of industrial and marine areas, plain carbon steel hardware usually must be replaced at least once or twice during the life of a treated pole. Hardware made from COR-TEN Steel, on the other hand, is strong enough and corrosion-resistant enough to withstand the ravages of these atmospheres *for the full life of a treated pole!*

Why It Lasts



Carbon Steel (1.5 years)

Actual photograph of initial coating of rust on uncoated samples of steel.

USS Cor-Ten Steel (1.5 years)

The corrosion rate of galvanized COR-TEN Steel Pole Line Hardware and galvanized carbon steel pole line hardware is found to be about equal until the iron-zinc alloy layer becomes exposed through oxidation of the protective zinc coating or through breaks in the surface due to scratches caused by handling. When these conditions prevail, it is then that the true value of COR-TEN Steel becomes evident. The rate of corrosion of the iron-zinc alloy layer on COR-TEN Steel is considerably lower than on the carbon steel. Further, when the bare metals are exposed, COR-TEN Steel forms a smooth, tightly adhering oxide coating that keeps moisture from penetrating, thus slowing down further corrosion (see cut); while the loose, flaky scale on carbon steel (see cut) drops off, allowing further corrosion to take place.

Higher Yield Point

Once deterioration of a steel sets in, the matter of exactly how long it can remain in service depends a great deal on the steel's yield point. This is particularly true of thinner gage hardware such as straps. Here again, COR-TEN Steel stands pole and cross arms above carbon steel. In thicknesses of ½ inch and less, USS COR-TEN Steel has a minimum yield point of 50,000 psi. This means that even when a piece of COR-TEN Steel Hardware corrodes to the point where a unit of carbon steel would have to be replaced, the COR-TEN Steel Hardware is still capable of many more years' active service on your pole. For example—in an industrial atmosphere, an uncoated ⅝-inch COR-TEN Steel bolt can be expected to have a service life of 35.7 years—*five times the life of a carbon steel bolt the same size!*

Simultaneous Replacement

Certainly the most economical method of establishing and maintaining utility lines is to be able to erect a new, pressure-creosoted pole and its hardware and have them both remain in service for an equal time. The savings enjoyed are obvious — no maintenance-crew-time for replacement, no further investment in hardware, no interrupted service, less wear and tear on equipment. That's why serious consideration of USS COR-TEN Steel is so important to your future maintenance costs.

Although United States Steel does not manufacture pole line hardware, it is the major producer of COR-TEN High-Strength Low-Alloy Steel. We will gladly send you the names of companies manufacturing pole line hardware from USS COR-TEN Steel. To help you in making your decision, you'll find a great deal of pertinent information on low-cost, high-strength, corrosion-resistant hardware in our book, "USS COR-TEN Steel Pole Line Hardware." Just write to United States Steel, Room 2801, 525 William Penn Place, Pittsburgh 30, Pennsylvania.

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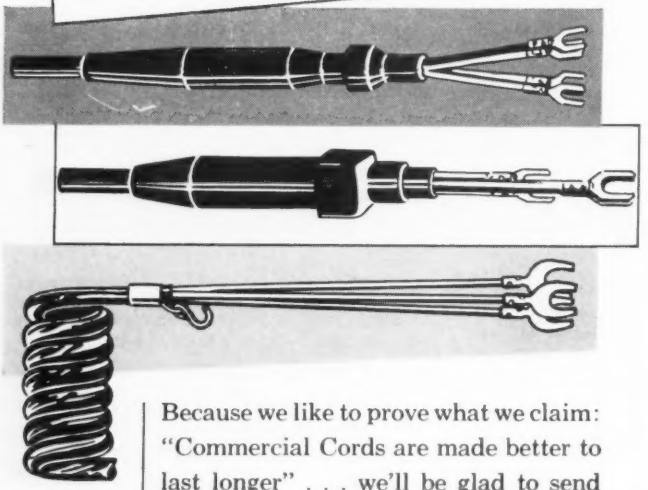

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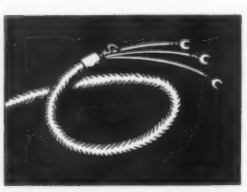

QUALITY CORDS FOR ALL MAKES AND TYPES OF TELEPHONE INSTRUMENTS

Washington

(Concluded from page 22)

McConnaughey, was Washington broadcast lawyer George S. Smith. Mr. Smith, current President of the Federal Communications Bar Association, has been practicing radio law in the capital for nearly a quarter century.

Meanwhile, there has been a change in perhaps the most important single job in the federal government affecting common carrier communications services — the Chief of the FCC Common Carrier Bureau. Significance of the job is, that in most cases, the FCC normally accepts the recommendation of its Common Carrier Bureau, and the Chief decides what that recommendation should be.

This is not to infer that the FCC itself is a rubber stamp, but the large number of cases it handles, and the fact that the staff members have been working day in and day out on the matters involved, make it likely that the bureau's views will be accepted unless several FCC members have strong views to the contrary.

Anyway, Harold G. Cowgill, who has done what most observers consider an excellent job of steering the bureau through several difficult years, has been transferred to the post of Chief of the Broadcast Bureau, an equally important job in that field. His predecessor, Edward F. Kenehan, has resigned to go into private law practice.

Succeeding Mr. Cowgill, but in an acting capacity, is John R. Lambert, who has headed the bureau's Telegraph Division since the present bureau form of organization was established in 1950. Mr. Lambert, senior division chief in the bureau, has headed the unit in an acting capacity previously in the absence of Mr. Cowgill.

Meanwhile, Fred W. Clayton, former Nevada Public Service Commissioner whose appointment to the vacant post of Assistant Chief of the bureau was announced several months ago, long before Mr. Cowgill's move, is now on the job at the FCC.

It may be a while before the job is filled on a permanent basis. Most likely ultimate prospects are Messrs. Lambert and Clayton, although there are one or two other staff members who doubtless will be considered.

Highlights

JAMES S. DAY appointed vice pres. in charge of operations of Tidewater Tel. Co., Warsaw, Va. Day joined Tidewater Tel. on January 1, 1955 as chief engineer . . . Frank G. Force, 68, owner & operator, Force Tel. Exchange, Wheaton, Kans., died May 23 of a heart attack . . . George I. Back Trophy for 1956 was awarded to U. S. Army Middle East Signal Communications Detachment during ceremonies at Kagnew Station, Asmara, Eritrea in Ethiopia on May 22. The trophy, emblematic of annual leadership in operational skill, is named in honor of Major General George I. Back (Retired) former Chief Signal Officer of the Army.

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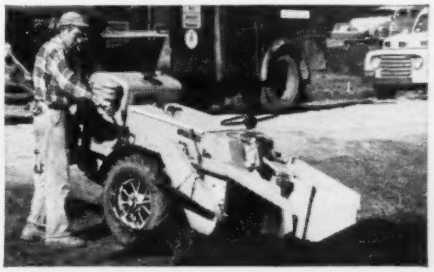
New Model 774 Wheel Ditcher for the big jobs up to 5'6" deep, 30" wide. Ideal for pipeline work. Exclusive Hydra-Crowd allows infinite range of digging speeds to 31 ft. per min. Unique flexible connection between chassis and wheel. Floating differential. All-hydraulic spoil conveyor. Hydraulic controls.

Model 705-B Runabout for scattered jobs up to 4' deep, 10½" wide. 15 m.p.h. road speed. Exclusive vertical boom digs right up to obstructions, leaves no ramp. Hydra-Crowd permits infinitely variable crowding speeds from 0 to 16 ft. per min. Fluid coupling prevents shock loads.

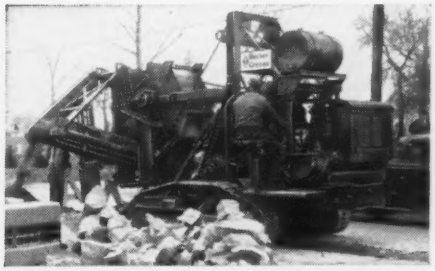
choose the ditcher that's right for you

The first step in reducing ditching costs is to select the machine that meets your requirements. Ground conditions . . . digging range . . . travel speed between jobs—all are factors that change with varying trenching operations. That's why Barber-Greene builds *five* distinctively different ditchers, each with special features that give it unsurpassed performance in its field.

Model 711 for widely scattered jobs. 45 m.p.h. travel speed. Digs to 5' deep and 18" wide. One-man operation. Hydra-Crowd assures maximum crowding speed for every digging condition.



Model 702 for narrow trenches to 5" wide, 40" deep. Ideal for cable, conduit, or small pipe. Easily moved. Varidraulic drive gives finger-tip control of crowding speed from 0 to 20 ft. per min.



Model 44-C for heavy-duty trenching. It cuts to 8'3" deep, 24" wide. 15 digging speeds from 1 to 11 ft. per min., or available with Hydra-Crowd with infinitely variable speeds from 0 to 7 ft. per min.

Write for literature on the ditcher that saves time on the job and on the road.

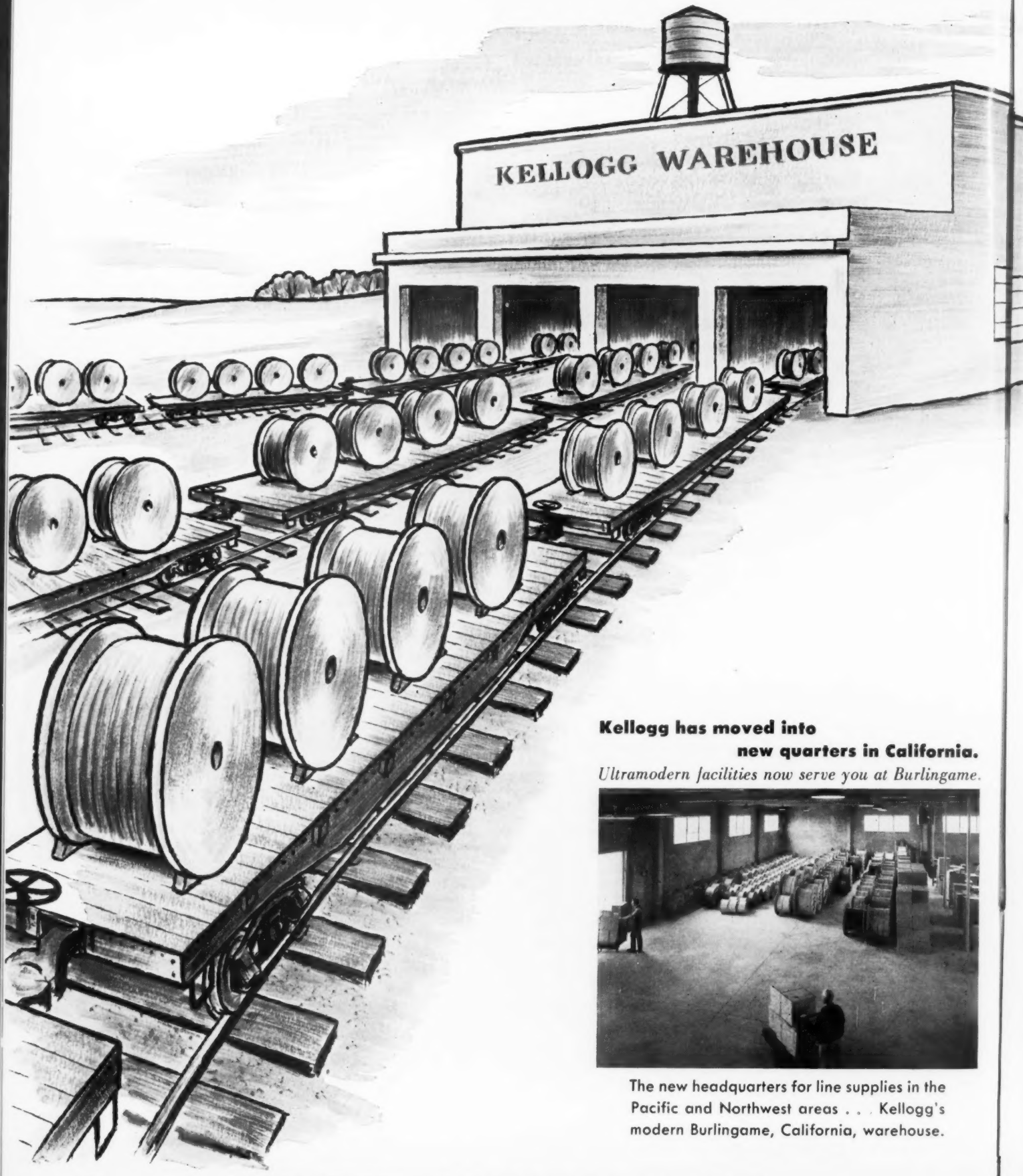
57-8-D

Barber-Greene BG

AURORA, ILLINOIS, U.S.A.

CONVEYORS . . . LOADERS . . . DITCHERS . . . ASPHALT PAVING EQUIPMENT

YES! NOW YOU CAN GET THE



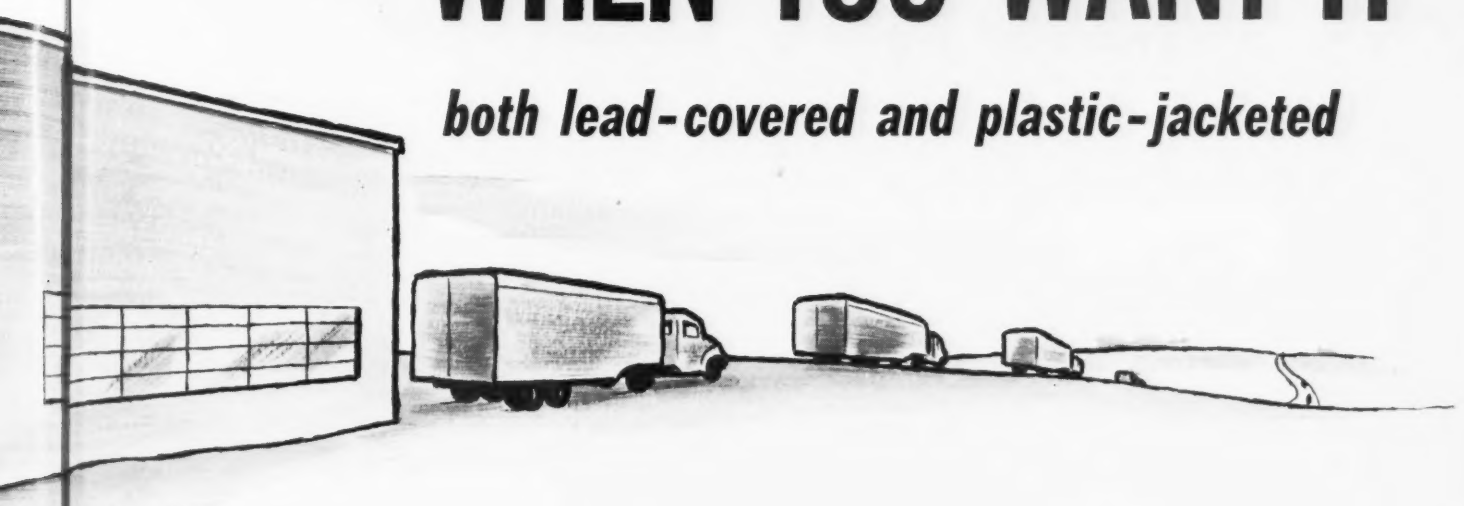
Kellogg has moved into new quarters in California.

Ultramodern facilities now serve you at Burlingame.

The new headquarters for line supplies in the Pacific and Northwest areas . . . Kellogg's modern Burlingame, California, warehouse.

E CABLE YOU WANT... WHEN YOU WANT IT

both lead-covered and plastic-jacketed



Now your local Kellogg warehouse offers lead-covered and plastic-jacketed cable in a complete range of sizes and specifications . . . many of them in stock and ready for immediate delivery.

Kellogg has had 60 years of experience in bringing line supplies to the independent telephone industry. When you order from Kellogg you know your order will be handled by an experienced telephone expert.

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KELLOGG SWITCHBOARD AND SUPPLY COMPANY
A Division of
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Phone: DEarborn 2-0750

KELLOGG Branch Warehouses and Offices:

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REliance 5-5445

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Burlingame, California
OXford 7-5780

4501 Truman Road
Kansas City 1, Missouri
Humboldt 7085

1515 Turtle Creek Blvd.
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Mansfield, Ohio
Mansfield 7-2816

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Copperweld* O-Eighty-Thirty gives you excellent conductivity, complete rust-resistance and permanent high strength for safe, long-span rural construction. As a result, your subscriber loops and secondary toll lines will perform better, last longer, require less maintenance and cost less over the years. And as a bonus value, Copperweld is the only high-strength wire suitable for future conversion to carrier. For prices, sag data and staking tables, write us today.

*Trade Mark

EDITORIAL

"Our Corporate Enterprise System"

LAST MONTH John S. Coleman, president of the Burroughs Corp. took his pen in hand and wrote a few paragraphs we believe deserve careful reading by all industry members.

In an article in the *New York Journal of Commerce*, Mr. Coleman said:

"The corporation is a moral community. It is something more than a place where goods and services are turned out. It is something more than the source of an economic surplus to be divided after much debate between management, labor and capital. We must necessarily insist on the economic base of the enterprise. And we can proudly point to the fact that our corporate enterprise system has produced a higher standard of living than any other. But repetition of this fact is not enough to sell the system . . ."

It seems to us that both labor and management have an equal interest in spreading the understanding of American capitalism. They have an equal interest in correcting the many false ideas which are so evident to any traveler abroad. The job is too large and too urgent to be left to management alone.

Mr. Coleman claims — *"Every resource is needed to project to an ever-wider audience a right picture of our business life as it is today. There are some submarginal areas, there are some tensions, but generally we have good management, generally we have good industrial relations and by consequence, we have unrivaled economic and social progress."*

We have, too, more than this. We have freedom. We have relatively free management and relatively free labor. But above all we have the best kind of Free Enterprise, — *Free Enterprise in ideas.*

The American business system means productivity and progress. It means, too, Democracy and the Bill of Rights. Here indeed labor and management can agree and show a common front to the world.

We well know that corporate executives have little inclination to become politicians. Their main objective has always been to manage successful business enterprises. And yet the decisions they take are becoming of increasing importance for the country as a whole. The corporate institution, indeed is becoming, as someone has phrased it, "one of the master tools of society," and consequently it is a master tool in the struggle for freedom in the world.

So then, whether we consider our own people or those overseas, it is essential that we *ceaselessly examine and explain the realities of our system.*

This exercise in itself will free our minds of platitudes and generalities. Though they have done yeoman service in the past, they are inadequate to the complicated realities of the present.

"We must talk about our system not only in terms of two cars in every garage and deep freezers full of steaks," writes Mr. Coleman. *"We must emphasize also its contribution to human happiness. And we can with frankness recognize where further progress must be made.*

"We have in the United States a workable society which is neither the creature of government nor a jungle of laissez faire. We have a society which with all its problems provides great material and spiritual blessings. What we have today is beyond socialism and capitalism. It is a new society. It is not perfect, nor is it materialistic and unjust. It is a society where ordinary men and women are getting ever a larger chance to use their initiative and imagination in satisfying work. . . ."

The records prove we are perhaps a little timid in putting forward our true ideas about the American system. Sometimes we hesitate to stirr up discussion. But by this timidity we do not halt change, we simply permit it to take place piecemeal and without a clear-cut idea of our goals.

Actually we have nothing to fear from debate and discussion of our economic life. If it discloses defects, then the sooner they will be mended. And if it discloses strength, as indeed we know it will, then by spreading understanding and confidence in our system we will have contributed to its further growth.

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When you buy telephones . . .

CHOOSE THE MOST COMPLETE LINE!

You can meet your subscribers' needs for standard and special-application instruments better with the Stromberg-Carlson line than with that of any other independent manufacturer.

In the table at the right note how the Stromberg-Carlson line fills *25 of the 26 customer needs listed.* Manufacturer "A" may meet up to 11 of the requirements . . . manufacturer "B" no more than 12.

All Stromberg-Carlson telephones—regardless of application—have met the rigid test of use in terms of rugged construction, trouble-free operation, maintenance economy and handsome styling.

SUBSCRIBER'S NEED	STR
1. Moisture-proof, concussion-proof, weather-proof telephone for use outdoors or in underground localities. Magneto type	
2. Moisture-proof, concussion-proof, weather-proof telephone for use outdoors or in underground localities. Dial type	
3. Self-contained desk type magneto telephone	
4. Self-contained wall type magneto telephone	
5. Magneto desk set box. (May be used with 1544 or 1534-M telephone to make a 2-piece set.)	
6. Desk set telephones with multi-line push buttons. For use with interior systems	
7. Suspended handset type telephone for use where space is at a premium (manual and dial instruments)	
8. Suspended handset type telephone. Complete instrument with A.C. buzzer for signal (manual and dial instruments)	
9. Suspended handset type telephone for flush mounting on wall. Complete manual instrument with A.C. buzzer for signal	
10. Suspended handset type telephone without induction coil-capacitor unit or signal. For use with desk set box	
11. Standard desk telephone in modern styling	
12. Standard "battery saver" desk telephone with 2-step hookswitch. Permits subscriber to monitor party line	
13. High-efficiency desk telephone with 10 DB more gain than standard model	
14. High-efficiency desk telephone with 2-step hookswitch	
15. Desk set box for use in making a 2-piece set	
16. Extension bell box using ringers or buzzer. Commonly used with 2-line telephone	
17. 2-line telephone with hold feature on both lines. Third line provides for intercom or local PX service	
18. Standard type desk telephone with push or twist type key	
19. Multi-line telephone used with "6K System" has 6 keys: 1 for holding 5 for central office, PBX, intercom, or private lines	
20. Hands-Free telephone. Can be used "hands-free" or as conventional instrument	
21. Electronic telephone for locations with high noise levels	
22. Pay station telephone	
23. Desk set telephone less ringer, less coil-capacitor unit	
24. Colored telephones in 8 colors	
25. Desk set convertible to wall telephone	
26. Colored telephones less ringers	

It pays to standardize on Stromberg-Carlson instruments!

STROMBERG-CARLSON	Company A	Company B
Yes (890)	Yes	Yes
Yes (950)	Yes	Yes
Yes (1248)	Yes	Yes
Yes (1258)	Yes	Yes
Yes (1268)	Yes	Yes
Yes (1270, 1272)	No	No
Yes (1532, 1532-M)	No	Yes
Yes (1533, 1533-M)	No	No
Yes (1533-MK)	No	No
Yes (1534)	Yes	Yes
Yes (1543)	No	No
Yes (2-1543)	No	No
Yes (1543-W)	No	Yes
Yes (2-1543-W)	No	No
Yes (1560)	No	No
Yes (1561)	No	Yes
Yes (1573)	No	No
Yes (1574)	No	No
Yes (1575)	No	No
Yes (1584)	Yes	No
Yes (Gai-Phone)	No	No
No	Yes	No
Yes (1544)	Yes	Yes
Yes	Yes	Yes
Yes	No	No
Yes	Yes	Yes

STROMBERG-CARLSON COMPANY

A DIVISION OF GENERAL DYNAMICS CORPORATION

Sales Offices: Atlanta 6, Chicago 6, Kansas City 8, Rochester 3, San Francisco

ANSONIA® Ankoseal® TOLL QUADDED CABLES

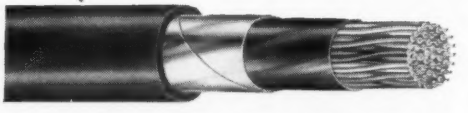
Quality that assures happy subscribers!

ANSONIA® Ankoseal®

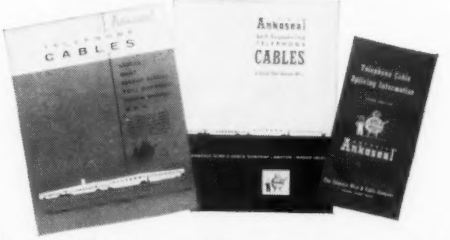
Toll Quadded Cables Assure Best Performance From Your Modern Exchanges

Throughout the country consistent performance reports prove that Ansonia Ankoseal Toll Quadded Cable gives subscribers the finest service available.

You can stop worrying about "Noisy Cable", "Excessive Cross Talk" and "Excessive Circuit Unbalance" when you install Ankoseal Toll Quadded Cable.



Available In 19 Gauge From 7 to 32 Quads



Ask For This New Literature on Ansonia Ankoseal Telephone Cables

1. Telephone Cables
2. Self Supporting Telephone Cables
3. Splicing Booklet

Ansonia Ankoseal Cables

Built Up To Quality. . .

Not Down To Price!

INDEPENDENT

THE ANSONIA WIRE & CABLE COMPANY · ASHTON · R. I.

The Oldest Name In Plastic Telephone Cables In The Most Modern Plant Devoted Entirely To Producing Cables.

"TO OBTAIN, train and retain workers of the grade and with the efficiency needed to perform the job in an acceptable fashion calls for enlightened, result-getting personnel policies."

"The Balanced Training Program" — A Cure For Plant Personnel Problems

By T. DeWITT TALMAGE*

BEING A COMPANY in a successful industry does not, in itself, guarantee success any more than being employed by a successful company automatically means that each worker will succeed in his job . . . It isn't the load that breaks one down — it's the way one carries it!

MOST OF THE more than three-quarters of a million telephone workers in this country will agree that the past 10 years in the telephone business have been busy ones. Moreover, official statistics[1] support this contention.

Throughout the past decade the telephone trade magazines have reported accomplishments piled upon accomplishments. There is now about one telephone for every three persons. Telephone calls are being completed at an average rate of about 150,000 per minute for each of the 525,000 minutes making up a year for a grand total of 80 billion local and toll messages.

One indication of the industry's tremendous expansion is the fact that the gross plant investment has almost tripled in the past decade. In addition, a review of country-wide operating results,[1] including an analysis[2] of fiscal reports, indicate a generally healthy financial condition.

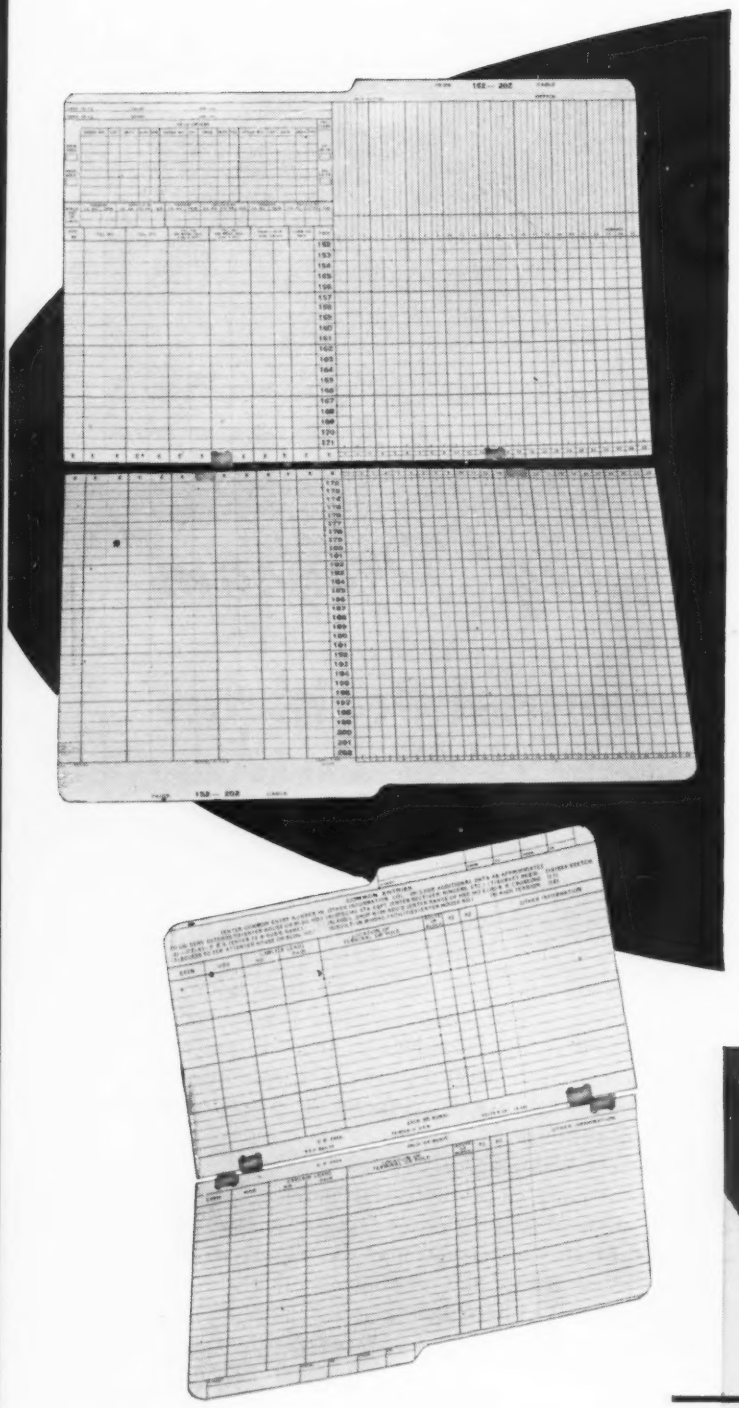
However, only the naive need be reminded that being a company in a successful industry does not, in itself, automatically insure success. Corroborative examples of this statement may be observed here and there. These are telephone companies that did not share in the general prosperity to the extent of equaling the telephone utility industry-wide average operating return or income.

There is a proverb that prophetically states that small causes give rise to great events. Under some circumstances, this is another way of saying that little leaks sink great ships. With these twin thoughts in mind, this article will discuss some methods that, where applicable,

*Educational Manager, Kellogg Switchboard and Supply Company, Chicago 38, Illinois.

ACME VISIBLE

CABLE AND TERMINAL A



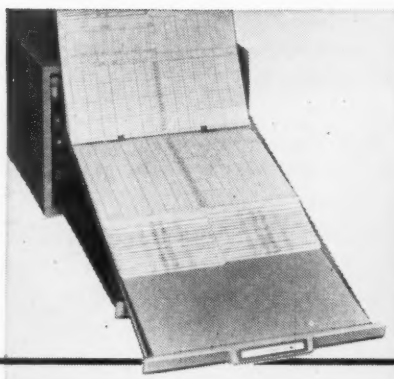
Designed by experienced telephone personnel to accommodate all of the various conditions encountered in the preparation of terminal assignment, exchange subscriber cable, and related basic plant records, in accordance with approved system practices. Simplifies and speeds the work of assignment. Adaptable for large, intermediate and small centers with the flexibility to meet the requirements for peak and normal work loads, varying number of cables, and other local conditions.

CABLE ASSIGNMENTS

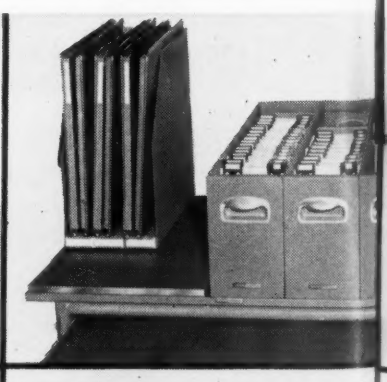
Cable assignments forms. With preprinted pair numbers, filed in numerical sequence, exposing a 51 pair complement. Cards are of special Acme Endurex rag content stock to permit repeated erasures and changes. Forms available for 50 terminal capacity and 8 party stations; 44 terminal capacity and 10 party stations; and for unusual conditions.

TERMINAL ASSIGNMENTS

Terminal assignment forms. Eliminate the necessity of referring to supplementary maps to determine the correct distribution cable terminal. Forms available for distribution by (1) street, block or alley; (2) office building or apartment; (3) exchange wire.

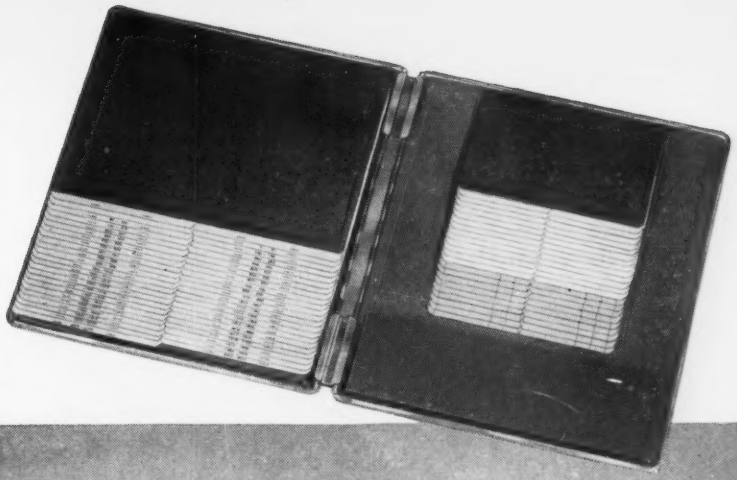


Visible cabinets are available in a number of sizes. Each tray has a maximum of 102 forms or the equivalent of 5,100 cable pairs. Cabinets can either be stationary on stands or desks, or mounted on turntables.



Portable stand with sliding shelf, cable assignment book rack holding three books and three vertical trays for subscriber line cards. Developed for smaller telephone offices where one individual handles both cable assignment and subscriber line cards.

ASSIGNMENTS

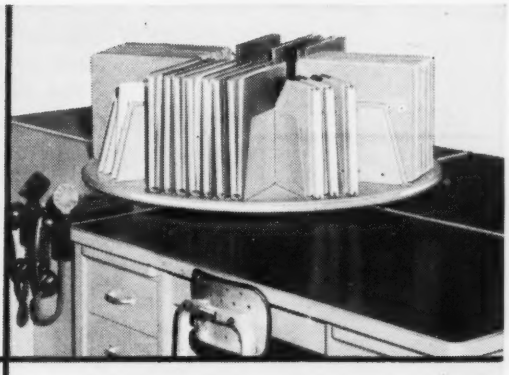


A TOUCH OF A BUTTON BRINGS THE RECORD TO YOU

Individuals seated at rotary need not move about to reach records. Books slide in and out without any lifting. Rotaries provide accessability to records at many points around circumference, and permit clerk to do a complete cable throw.
They are designed to house a multiple number of light-weight metal-edged visible books containing many thousands of records.

Motorized Rotary and 6-position Desk Assembly with push-button controls at each position. One of many sizes available for Plant Department Records; Reservation Bureaus; Inventory Records; Records of Shipments; other central-control references and posting requirements.

Rotaries provide tremendous capacity in a compact area and permit instant availability of records to one or more persons. Rotary on pedestal, hand operated and desk height, may be placed next to or between desks, wherever convenient.



This illustration shows rotary placed at the junction of four desks . . . easily available to four persons. Visible card books are filed between spaced divider fins with intermediate divider openings for filing other papers, etc.

Acme Visible equipment has been designed for telephone use by Acme Systems Engineers in close cooperation with practical experienced telephone experts. Tell us your requirements and receive our suggestions and quotations.

S-6-15-57

ACME VISIBLE RECORDS, INC.
Telephone System Division, Crozet, Virginia

Please send us illustrated booklet
- ☐ #1088 on Acme Switchboard Keyshelf Units
- ☐ #975 on Acme Flexoline
- ☐ Have representative call. Date.....Time.....
- ☐ We are interested in Acme Visible equipment for .....records
  kind of records

Company.....Attention.....

Address.....

City.....Zone.....State.....

may be considered for adoption by those seeking to improve operating results.

Those who study such matters and try to reconcile variations in fiscal and service performances know that wide differences in results are not peculiar to telephone companies. Nor is it even confined to the public utility industry. This is because, among other things, many enterprises are closely linked with, and their welfare is consequently influenced by, the characteristics of the territory they serve. The telephone company, by its very nature as a semipublic institution, usually endeavors to fit into the community pattern —not establish it. The fluctuating fortunes of communities thus account for their due share of non-uniformity of operating results of local telephone companies.

Exceptions to this situation are, of course, those cases where the tables have been turned by telephone companies that are carrying on extensive rehabilitation, expansion, and modernization construction programs of various kinds. This results in the telephone company setting the example, and establishing the pace, for neighboring businesses to follow.

What's Ahead?

ONE OF THE reoccurring questions asked by those being interviewed for employment, especially in the plant and engineering activities of telephone companies, is in this vein of thinking: In view of the imposing record of accomplishments made during recent years, haven't the telephone industry's major tasks already been completed? In other words, what is there left to do during the next five[3] or 10 years?

These pertinent questions, worthy of factual replies, are representative of prospective workers' interest in the size — and perhaps complexity — of the telephone job to be done in the future as compared to the recent past. Incidentally, some presently-employed workers may be wondering about the same subject.

If human behavior can be predicted within reasonable limits, there are significant signs that the next 10 years of the telephone business will be as busy as the past ten.

For instance, the director of the Bureau of Census, Washington, D. C., has stated that while "the Census Bureau does not make forecasts," he listed reasons behind the rise in the national birth rate of recent years and implies that the boom will continue.

"THE ECONOMICAL solutions to the technical and business problems that will be encountered will continue to require the best efforts of competent service-minded personnel — personnel thoroughly grounded in the rudiments of their jobs."

It is estimated that there will be a population increase of 28 million during the next 10 years which means that there will be 198 million people in this country in 1967.[4]

Long-Range Growth

FOR THE benefit of those interested in a longer-range forecast, say 20 years,[5] the following figures indicate some of the things that are in store for all of us: If the birth rate of this country persists at the 1954-1955 level, there will be 234 million of us in America in 1977. To experienced observers that seems to be a reasonable assumption and the projection is breath-taking.

Even if the birth rate slumps to the 1934-40 basis — the depression level — there will be 211 million of us in 1977 as against 170 million at the present time.

What does this increase in population mean to the telephone industry as a whole?

It is fairly obvious that this increased population will bring about a home-building boom in the 1960's that will exceed anything we experienced in the 1950's which has averaged to date, and is expected to continue to do so, more than one million new non-farm dwellings built per year.[6]

However, the building of these homes is only a part of the total construction job because this development in turn will require an expansion in a variety of supporting industries, services, and trades with their attendant construction needs which, combined with housing and other types of construction, totals 50 billion dollars a year. This is by far the largest of our indus-

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[1]*See "Federal Communications Annual Reports," 13th to 22nd, incl., dated fiscal year ended June 30, 1947 to 1956. Also reports filed with various state regulatory bodies.*

[2]*"Analysis of Financial Statements," (book) 4th ed., by Harry G. Guthmann, 703 pp., 1953. See Chapter 14, entitled: "Public Utilities."*

[3]*"The Next Five Years," by Howard Wingate, The Magazine of Wall Street and Business Analyst, Vol. 98, No. 7, p. 396-399, and 440, June 23, 1956. Published biweekly by Ticker Publishing Co., Inc., 90 Broad Street, New York 4, N. Y.*

[4]*"Our Manpower Future — 1955 to 1956, Population Trends — Their Manpower Implications," 32 pp., 15 charts. U. S. Department of Labor, U. S. Government Printing Office, Washington 25, D. C. 1957. Price 30 cents.*

tries, accounting for nearly 15 percent of our country's gross national product, and is a vital force in promoting a sound, expanding economy.

(Those who are interested in keeping in regular touch with the activities and trends in the construction industry, which have a marked influence on the demands for telephone service, will find helpful information contained in such a typical magazine as "Construction Review.")

An important correlative effect of this double-barreled construction boom is concisely expressed in a favorite economic shibboleth heard often in building contracting and construction circles: "You cannot have a depression as long as the construction industry is busy."

At this point some readers may be thinking: "This bird's eye view of the national population trend, interesting as it is, is of only indirect concern to me. What I want to know is:

'How do I go about getting the same basic picture as it specifically applies to my service area?' "

The method of obtaining estimates of population growth for county and smaller units on which to base telephone station- and line-growth forecasts is discussed in four references included in the appended bibliography written by Hugh H. Brown, Robert C. Schmitt, John A. Scott and Van Beuren Stanbery. These references explain how each telephone company can work out its own individual answers to the effect of population growth on its present operations.

These glimpses of the future work-load should be of interest and concern to affected telephone companies not only because of the potential volume of new business involved and the associated financing which will be required but also because of the technical problems that doubtlessly will be encountered.

The economical solutions to the technical and business problems,[7] [8] that will be encountered will continue to require the best efforts of competent, service-minded personnel — personnel thoroughly grounded in the rudiments of their jobs.

All in all, because the rapid advancements in technology and the public's steady acceptance of the resulting improvements give no evidence of slowing down, it appears that the communications industry is entering the most interesting and challenging decade of its history.

Personnel Requirements

IF WE DESIRE to continue to attract the right caliber of men to the ranks of telephone workers, some organized, realistic ideas of these challenges and opportunities should be conveyed to prospective employes. Moreover, if the present rate of worker turnover is not allowed to increase, the same or even expanded information should be provided to existing personnel.

These are good reasons why each company should take another look at the job ahead[9] in its service area, and, keeping in mind the potential problems mentioned so far, do a little soul searching in an effort to determine if telephone working conditions are maintaining their relative and historic attractiveness to qualified men.

To do less may result in a dangerous dilution of talent and skill in the working force at the very time when we can ill afford to be without sufficient competent people.

Some appreciation of the ramifications of this situation may be had when it is realized that it is only one of the many problems involved in the combined efforts of well over 4,000 separately-owned companies, varying widely in size, to jointly supply telephone service throughout the nearly 3 million square miles of land that make up the continental United States.

The public demand for satisfactory interconnections between each and every one of the 60 million telephones that radiate from over 21 thousand telephone central offices gives rise to a necessity for a high order of coordination and teamwork.

To obtain, train, and retain workers of the grade and with the efficiency needed to perform this task in an acceptable fashion calls for enlightened, result-get-

[5] *"America's Next Twenty Years," (book) by Peter F. Drucker,* 114 *pp.*, 1957.

[6] *"Housing in the Economy,* 1955, *with a Statistical Appendix Excerpted from the Ninth Annual Report," Housing and Home Finance Agency,* 70 *pp., illus.,* 1956. *U. S. Government Printing Office. Price* 25 *cents.*

[7] *"Problems of the Small Telephone Company," by William C. Henry, Public Utilities Fortnightly, Vol.* 58, *No.* 8, *pp.* 589 *to* 593, *incl., October* 11, 1956.

[8] *"Small Company Talk: How Small Can a Company Be?" by Bill Corman, Telephone Engineer and Management, Vol.* 53, *No.* 11, *pp.* 33, 34 *and* 35, *November,* 1949.

[9] *"Planning for Modern Independent Telephone Service," by Donald C. Power, Public Utilities Fortnightly, Vol.* 58, *No.* 8, *pp.* 570 *to* 580 *incl. October* 11, 1956.

"AS GOOD as teamwork has been in the past, further growth and improvement will require equal, if not greater, teamwork in the future. Because of this fact, promotions of existing employes and the hiring of new employes should be done carefully with an eye to the future as well as the present."

ting personnel policies that will stand up under the test of unbiased comparison with those in other fields of endeavor that are competing with us for similar talent.

To state it in another way, it is the old, old law of supply and demand in action as it applies to people's services. One of the important points worth emphasizing is well known but seldom discussed: everybody seems to be in favor of the law of supply and demand as long as it works out in their favor. If it works to their disadvantage, they're "agin" it. If the futility of opposing the inevitable was more widely recognized, there would be fewer men going to an early grave.—*To Be Concluded in the next issue.*

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[4] "The Skilled Workers of Tomorrow — Where Will America Get Them???" by James A. Brownlow. The American Federationist, Vol. 62, No. 12, pp. 18-20, incl., December, 1955.

[5] "A Technique for Eestimating the Population of Counties," by Hugh H. Brown of the California Taxpayers' Association, Journal of the American Statistical Association, Vol. 50, No. 270, pp. 323-343, incl., June, 1955. Subscription rate. $8 per year. Prices for back issues available on request from the Secretary, American Statistical Association, 1757 K. Street, N.W., Washington 6, D. C.

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[7] "Telephone Growth Forecasting," by John A. Scott, Telephony, Vol. 150, No. 16, pp. 19-20, 46-48; April 21, 1956.

[8] "Better Population Forecasting for Areas and Communities — A Guide Book for Those Who Make or Use Projections," by Van Beuren Stanberry, 80 pp., September, 1952. Domestic Commerce Series No. 32. For sale by Superintendent of Documents, U. S. Government Printing Office, Washington 25, D. C. Price 25 cents.

[9] "Employment Interviewing," 103 pp., June, 1956. Publisher same as (8) above. Price 40 cents.

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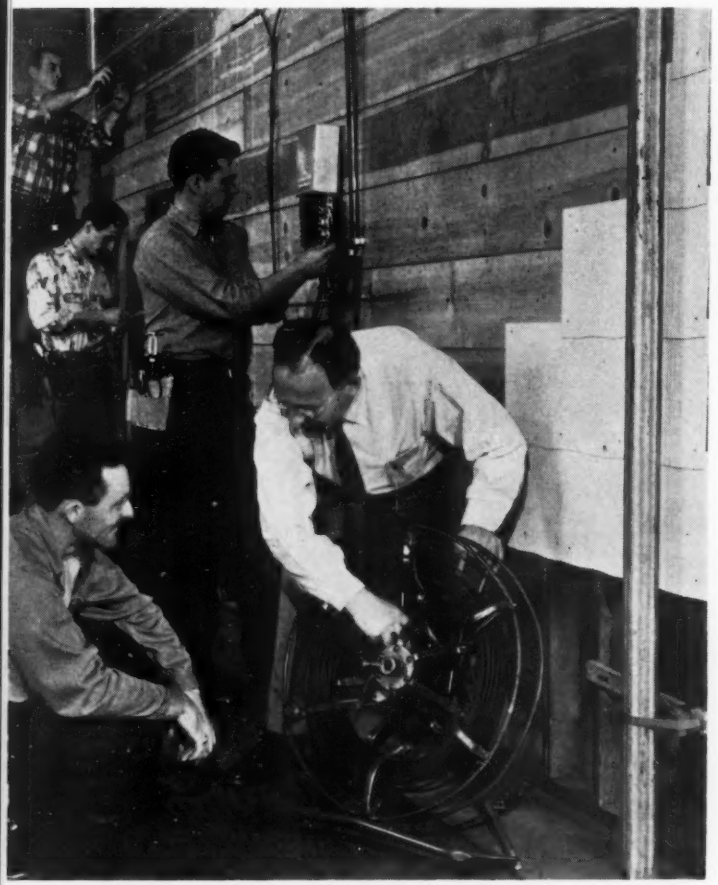
[12] "Three-Dimensional Engineers," by Frederick R. Kappel, president, American Telephone and Telegraph Company, address before the American Institute of Electrical Engineers, on January 21, 1957. See Bell Telephone Magazine, Vol. XXV, No. 4, pp. 189-196, incl., Winter 1956-57. Published quarterly by the American Telephone and Telegraph Company, 195 Broadway Street, New York 7, New York.

[13] "*Basic Electricity*," (book), 624 pp., over 900 illus., by Van Valkenburgh, Nooger & Neville, Inc., 1954. 5 volumes, soft cover, $10.00 per set. Cloth bound: all 5 volumes in a single binding, $11.50 per copy. Order from Educational Division, Telephone Engineer Publishing Corp., 7720 North Sheridan Road, Chicago 26, Illinois.

[14] "*Basic Electronics*," (book), 550 pp., 800 illus., by Van Valkenburgh, Nooger & Neville, Inc., 1955. 5 volumes, soft cover $10.00 per set. Cloth bound: all 5 volumes in a single binding, $11.50 per copy. Order from Educational Division, Telephone Engineer Publishing Corp., 7720 North Sheridan Road, Chicago 26, Illinois.



"IN ORDER not to lose the trainee's interest, training should be carried on at an even, steady pace — but not too rapidly. . . . It's the supervisor's job to carve the instruction into manageable chunks — and serve it in an orderly manner."

Worth Writing For

WRITE Readers' Service Department, TEM, 7720 N. Sheridan Rd., Chicago 26, Ill., for your copy of Morrison-Pelsue brochure describing the MoPeCo Manhole Ventilating Heater.

Improved Traffic Supervision

Boosts Office Morale—Builds Employe Spirit

By ALTON STEELE*

"THE MAJOR difficulty with morale or attitudes is that regardless of training expense we can't teach people to have good attitudes. Attitudes are caught — not taught. Therefore, we must build good attitudes and morale in our supervisors and let it 'rub off' on other employes . . . ."

WHY IS IT that some Central Offices never work smoothly and efficiently, no matter how elaborate their facilities and quarters may be, while others always have a good record with a minimum of physical equipment? The basic difference is very likely to be the quality of the Traffic supervision.

The objective of Traffic Department Supervision, stated briefly, is to conduct that part of the telephone business which must be handled by operators, or dialed by customers, in such a manner as to give the best grade of service possible at a reasonable cost.

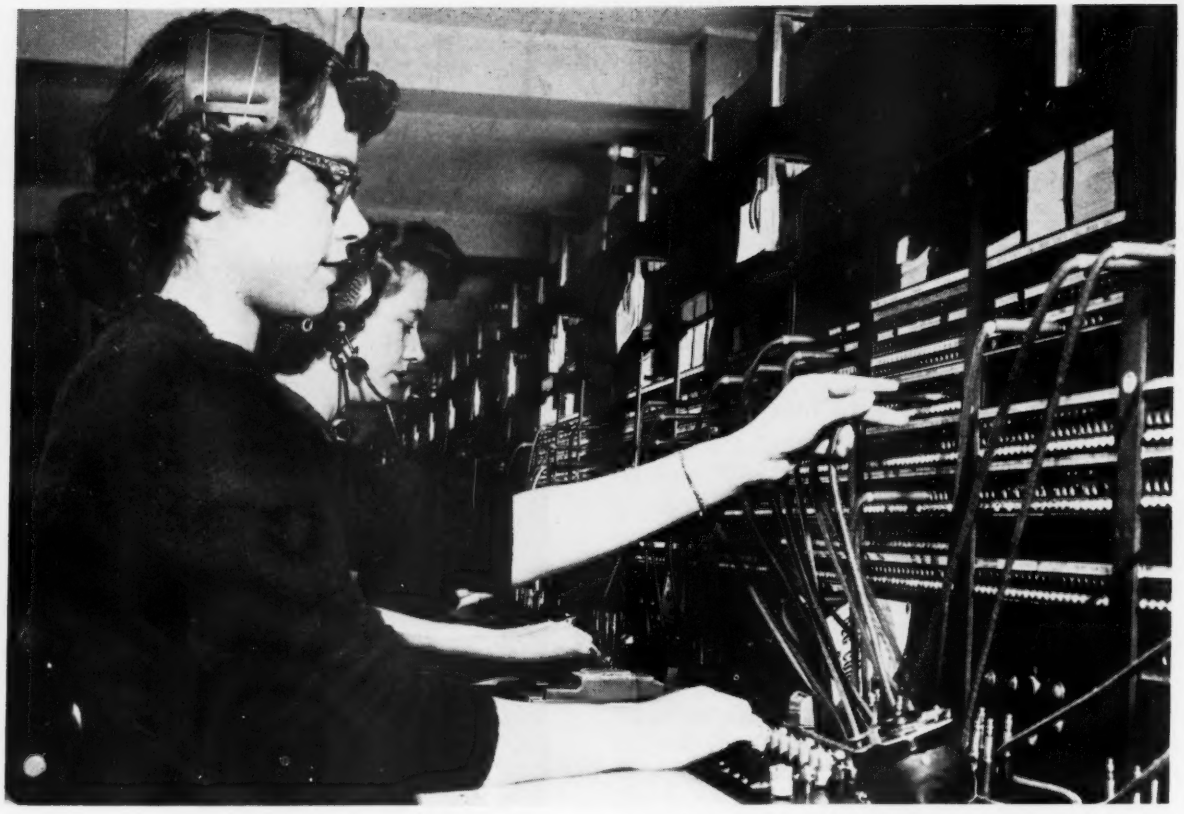
This requires continual attention to assure that properly trained operating personnel are available when needed, that they are provided with adequate facilities and equipment to perform their work, and that their working quarters are as pleasant and attractive as can reasonably be provided.

It is urgent that all Traffic Supervisors remain alert to the fact that good Traffic supervision is one of the primary factors determining the difference between good and poor service, and can mean the difference between profit and loss for a company.

Certain obvious actions must be taken to meet the objective stated above. Careful attention must be given to force planning and scheduling so there will always be an adequate number of employes available when needed. The operator training and development program must be well planned and followed up so the operators will be skilled in operating techniques and can work effectively.

Convenient, accurate rate and route material, adequate positions and trunks are required for efficient operation. Attractive lounges, locker rooms and rest rooms are also needed. All of these are the responsibility of the Traffic Department and there is a wealth of material available dealing with such phases of the Traffic job. (*Please turn to page* 40)

**Mr. Steele is district traffic superintendent, Peninsular Telephone Co., Lakeland, Fla.*



"SUPERVISORS must be taught to understand the people they supervise."

It is the purpose of this article to discuss one of the more often overlooked factors which can have a tremendous effect on our performance and to show how we may more nearly meet our objectives through better supervision in the Traffic Department.

Office Morale Is Important

THE FACTOR we will deal with is office morale or employe spirit or attitude. If other things are equal, an office with good morale will have less employe turnover than one with poor morale and avoid the cost of training new employes and the poorer service and lower efficiency caused by attempting to handle the job with inexperienced people. Service also suffers when operators have an indifferent attitude and customers are quick to notice it.

The major difficulty with morale or attitudes is that regardless of training expense we can't teach people to have good attitudes. Attitudes are caught — not taught. Therefore, we must first build good attitudes and morale in our supervisors and then let it "rub off" on the other employes.

How do we build good morale among our supervisors? We treat supervisors the way they should treat those they supervise — as adult humans. Possibly the first morale building step with the supervisor is to carefully define her job and to show her what is expected of her and where her job fits into the overall picture. Unless this is done carefully and included in the training of the supervisor, she is likely to get a distorted view of the relative importance of her job and the different phases of her work.

As an example, there are many chief operators who spend too much time on clerical or other routine work while more important duties are "postponed" or neglected due to lack of time for them.

This is true of other supervisory jobs, too, so we should see that the supervisor adheres to the supervisory duties as defined and leaves the clerical work to the clerks. As we progress up the supervisory ladder, our definitions will naturally be broader and in much less detail than for the lower jobs.

The Chief Operator is responsible for the administration and supervision of the operation of an entire office (or unit). She is the company's management representative in the office. She has authority to handle any personnel matter which may arise in the office. She is responsible for the training, development and progress of each employe.

She is expected to: — (1) *Delegate as much of her job as possible* to Assistant Chief Operators, Service Assistants, Clerks and Instructors, and to furnish the necessary help, guidance and encouragement for them to carry out their jobs; (2) *set a good example and help each employe develop a proper sense of values in* regard to her work in such items as attendance, courtesy, service consciousness, and desire for advancement; (3) *carry out and enforce company policies* and regulations and suport management decisions.

She can expect and should get: — (1) Backing and cooperation from the management of the company; (2) help in solving special problems or handling unusual conditions, and (3) the cooperation of everyone in the office.

Once a supervisor's job has been defined, the second step is to give her the necessary training and help to be able to handle the job properly. This naturally requires a lot of follow-up.

The training given a supervisor should stress the ap-

proach to be used in dealing with the people she supervises rather than just the result to be accomplished. Our teaching should point out the benefit of doing things the right way.

Three examples of this in a Service Assistant's job are: (1) When she notices an operator's chair needs to be adjusted, she does it so the "operator will be more comfortable and won't tire so quickly;" (2) she has the operators fold their headset cords across their laps "so someone won't trip on it and jerk the operator's head;" (3) she takes training observations so she may help the operators by giving any training indicated as needed by the observation. She must never take a training observation "to find out what they're doing wrong."

Employes have a right to know why we do things a certain way — what our reasons are. Telling them "there's no reason for it — it's just company policy" never satisfies them or creates any interest or enthusiasm.

Human relations is undoubtedly the most important phase of a supervisor's training, yet it is one we often shove into a back corner and neglect. The Bureau of Labor Standards states that bad attitudes are cited as the reason for job failure more frequently than inability to do the work. The main difference between a good supervisor and a poor one is frequently that the poor one causes bad attitudes in the people she supervises.

Supervisors must be taught to understand the people they supervise. They must realize that, particularly with the new people and young people, good human relations is more important than good pay and liberal benefits. Employes prefer to work where they are accepted on a friendly basis and treated as adults. They dislike working where the supervision is poor and they are not made to feel that they are important to the organization.

It is necessary that we teach supervisors that by the nature of their positions, they can't be "just one of the girls" if they are to be good supervisors, yet they must have a friendly helpful attitude toward all employes and be easy to approach.

Supervisors, particularly those in the higher level jobs, must learn to delegate duties to the people reporting to them. This delegation of responsibility is a very difficult thing for many supervisors, but those who do it properly accomplish more and develop much better employes.

It is necessary continually to see that all traffic training is being conducted in the proper manner. Those responsible for supervisory training can do much toward building morale among the traffic force.

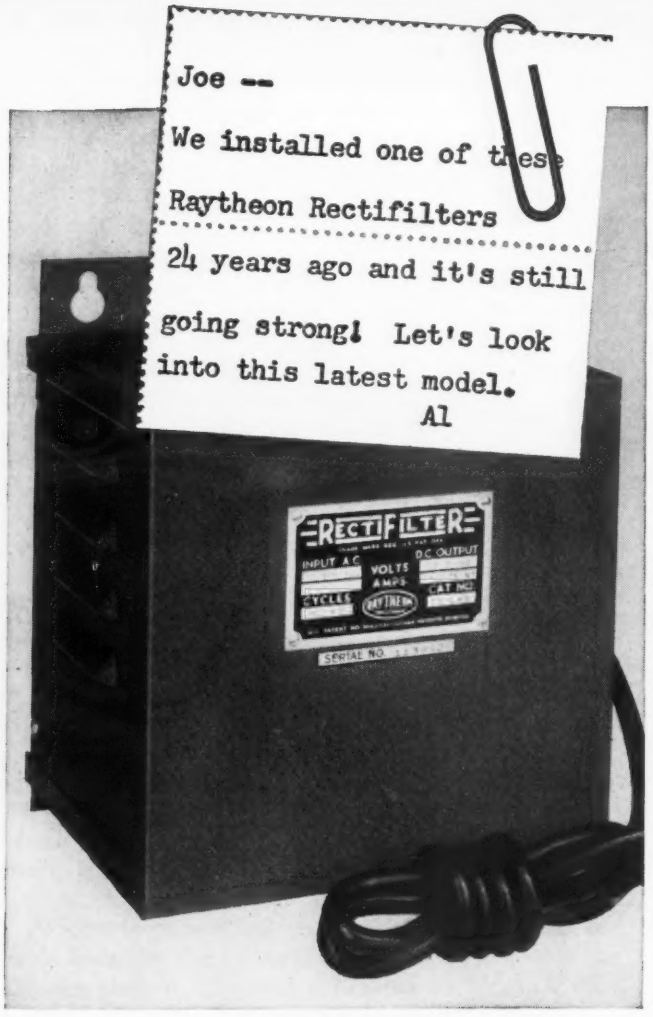
The "Information Program"

THE THIRD step in building supervisory morale and ultimately the proper spirit of the whole organization is a good "*two-way information*" program. This can be accomplished through periodic meetings in which the supervisors are kept up to date on all phases of company policies, progess and plans.

Our definition of "two-way information" is not the classic one of passing rumors down through the line or organization and gossip up through it. That would, of course, defeat the purposes already expressed. These meetings become "two-way" and build up the interest of the supervisors when they feel free to express ideas or offer suggestions and when they are consulted about the problems of their own particular offices.

A fourth step in building morale is to give encour-

"A 'TWO-WAY' information program can be aided by periodic meetings in which the supervisors are kept up-to-date on all phases of company policies, progress and plans."



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agement to the supervisors. They should be allowed to run their own jobs, encouraged to think for themselves and to stand on their own feet. A word of sincere praise when merited will give a person new confidence and cause her to work with renewed efforts.

Counseling interviews should be held with supervisors at intervals to keep them informed on how they are doing and what traits they should work to improve. These interviews must be conducted by adequately trained people if the most benefit and no harm is to be derived from them.

So far, we have dealt only with some steps which can be taken to build up the morale of the supervisory force with the expectation that it will spread to all other employes. There are certain policies we can follow which will improve the morale of an office and the quality of supervision.

Possibly the most important of these is to be consistent in the way all employes are treated and see that all supervisors are consistent in their treatment of employes. Very few things stir up bad feelings in people as much as suspected or actual favoritism or partiality toward certain employes.

Employe Appraisal

SETTING high standards for promotions and refusing to compromise on them can result in better supervision. There are three items to be considered in promotions. Two of these, attendance and experience (or seniority) can be accurately determined, but the third, ability, is more difficult to appraise.

Care should be given the establishment and use of some method of employe appraisal. In setting up such a system, it is sometimes useful to work backwards by determining the more important characteristics of a good supervisor and then making an analysis form based on these traits for use in rating applicants for promotion.

Most of the good characteristics we are looking for are closely related to the person's attitude, as will be evident in the following list which enumerates some of the traits of a good supervisor:

(1) Enthusiasm — likes her work.

(2) Energy and initiative. Likes a challenge. Will stand on her own feet.

(3) Patience and perserverance.

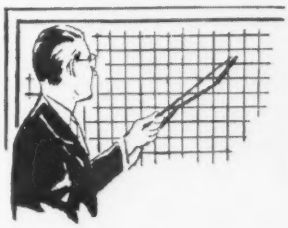
(4) Good sense of values. Sets a good example.

(5) Interested in others. Understanding and tactful in dealing with them.

(6) Fair and consistent. Does not jump at conclusions or place blame. "Bails people out rather than bawling them out."

If the top management levels in the Traffic Department stress proper supervision and use the necessary care in selecting and training supervisory forces, it is possible to build and maintain good morale and attitudes among all traffic employes. But the job requires constant attention.

Most of the physical factors mentioned above, such as equipment, supply, training, health, discipline and morale, apply just as surely to the Traffic Department in attaining its objective. Of these, employe morale is certainly one of the most important.—*Alton Steele.*



telephone ASSOCIATION activities

Big Meeting In Dallas

Texans Hold 52nd Annual Meeting: D. G. Gardner, Jr. Elected President

HOLDING their 52nd annual Convention at San Antonio's Gunter Hotel, members of the Texas Telephone Association heard Speakers, Donald C. Power, President of the General Telephone Corp., and the United States Independent Telephone Association; R. A. Goodson, general manager of the Southwestern Bell Telephone Co.; Harry Waddell, publisher of McGraw-Hill's Petroleum Week and Ben Smith, merchandising manager, Southwestern Bell Telephone Co., emphasize the need for aggressive merchandising programs that will produce more revenue per subscriber.

Merchandising

USITA President Donald C. Power, stressing the development of new products and services, stated that the selling of these products can go a long way toward helping the telephone industry meet its revenue requirements.

"You are familiar with the increasing popularity of these devices, even in small communities served by many Independent companies," Mr. Power said. "Through them we are able to meet special needs of our subscribers — needs which we have never been able to fill before. There is a need for additional telephones in many homes and places of business. And by that I do not merely mean telephone extensions. I am referring to additional subscriber stations. That, of course, means a lot of educational and promotional work yet to be done. It also can mean a greater increased revenue potential per subscriber."

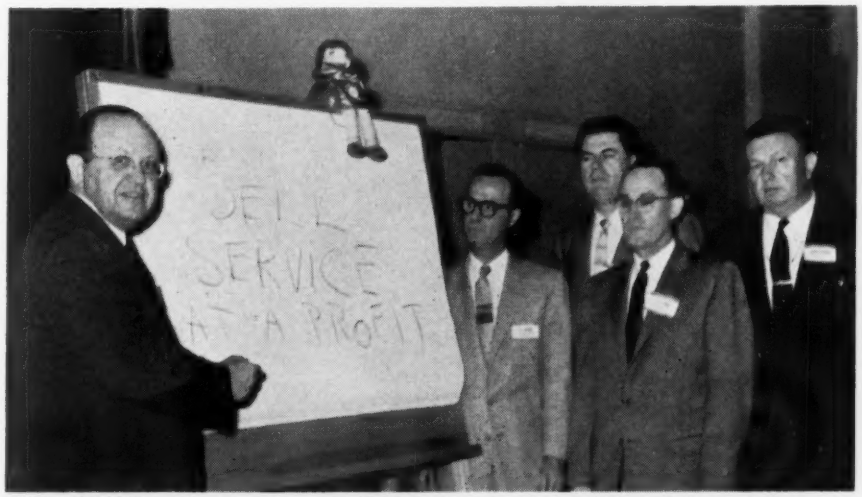
Commenting that the day is gone when the industry can feel that one telephone in every home is an adequate goal, Mr. Power stated, "In addition to more service volume, the new telephone appliances will enable us to help our subscribers in many ways in color decoration in their homes, in assisting the hard of hearing, and others who have special need for mobile telephone service or signaling devices. There is that vast new field of special business equipment services now opening up before us, such as telephone answering and recording devices, optional loud-speaking telephones, which can be used for conferences or other purposes without tying up the subscriber, physically, by engaging his hand or person in contact with the instrument."

Emphasizing that "here is where our research and promotion can pay off in a big way," Mr. Power urged his listeners "to be alert to the business opportunities which lie before us."

"But whether we do or not," he said, "you may be sure of this much, somebody will. If we do not discover and explore and fulfill these steady developing needs of the public for new services to be used in connection with their telephones, you can rest assured that there will be others, outsiders, so to speak, in terms of our telephone industry, who will step in and do this job which needs to be done."

Turning to the subject of general business activity, Mr. Power said, "it is commonly predicted and expected that an appreciable proportion of future income will be derived from products which are not even in existence today."

"These industries have grown to



BEN SMITH of Southwestern Bell Tel. Co., St. Louis, Mo., (left), is shown as he discusses "Merchandising" during Commercial Conference held during the Texas convention. Others pictured are from left, ALBERT RUCKER, Palestine Tel. Co.; W. H. THOMSON, General Tel. Co. of the Southwest; E. H. UTZMAN, Southwestern States Tel. Co. and FABIAN BEARDEN, Home Tel & Electric Co.

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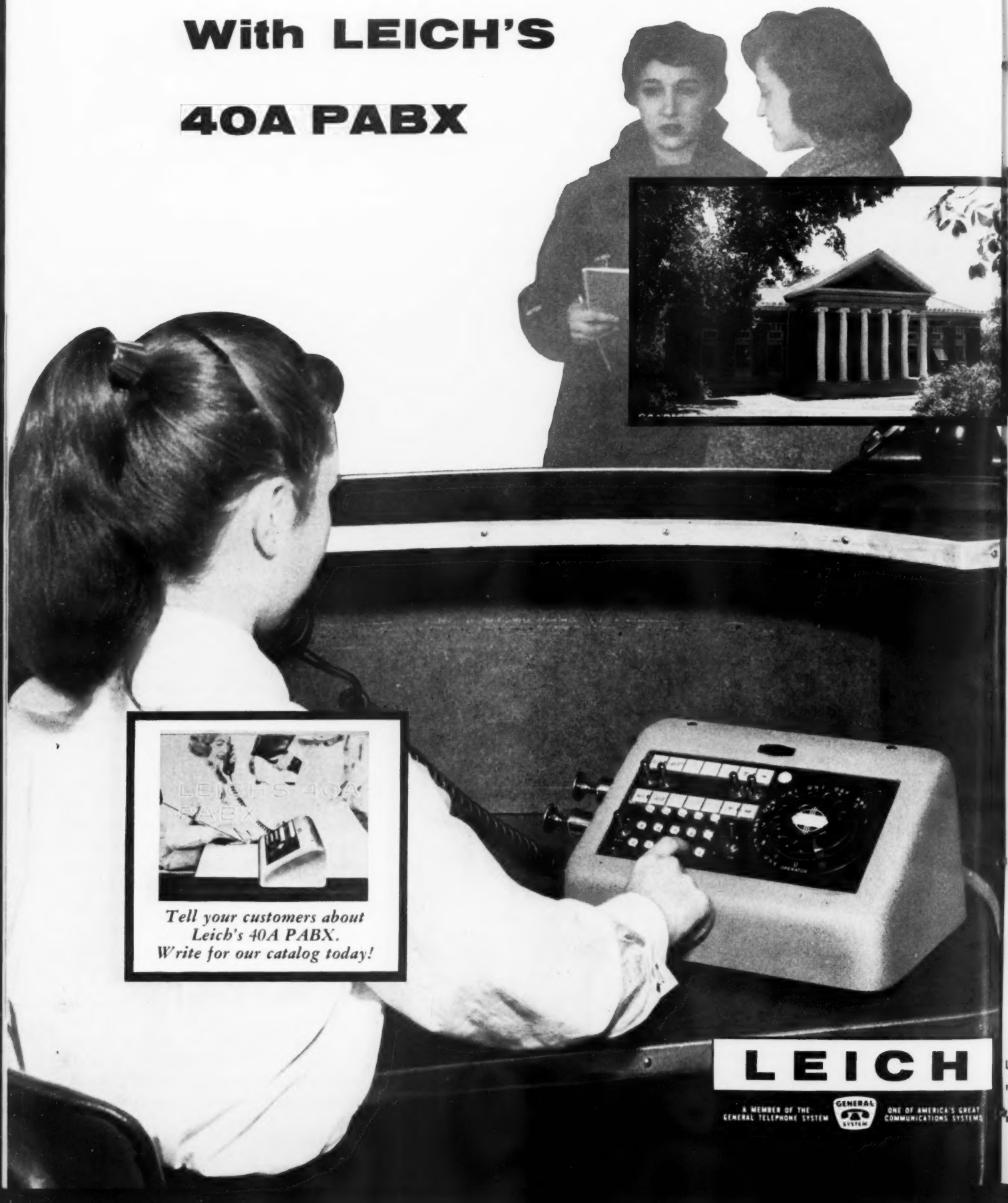

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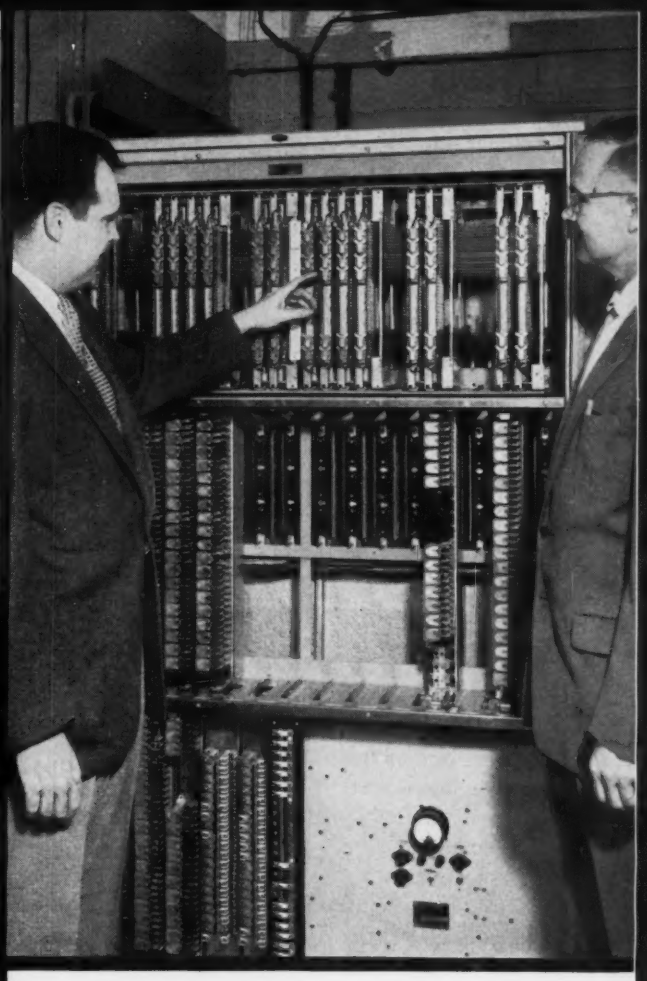

(Right) The Parsons College switchboard is equipped with 40 lines, 4 local links, 4 city trunks, and conference service. The capacity of the 40A is 40 lines, 6 local links, and 10 city trunks. Conference service is an optional feature.

Parsons College at Fairfield, Iowa, is a liberal arts school with 26 buildings scattered over its 55 acre campus. Telephone service between many of the buildings and to the main exchange is provided by a Leich 40A PABX switchboard. Here's how this Leich PABX keeps telephone traffic moving without a hitch.

Leich's exclusive keyset turret extends incoming city trunk calls quickly. When the attendant at Parsons receives such a call, she reaches the inside telephone by merely pressing two keyset buttons in sequence.

This simple operation connects the incoming call to a party in any of the school's several buildings which have PABX extensions. Callers are seldom, if ever, kept waiting by a busy attendant.

The folks at Parsons make their inside calls, consultation calls, and outgoing city trunk calls easily, too. They make these calls themselves—without assistance from the turret attendant.

The backbone of the 40A PABX is our Leich all-relay dial switchboard. It's modeled after the famous Leich Dial System. It offers dependable switching in a compact cabinet which will fit in any modern office or plant.

Pictured above, extreme right, is the Parsons College switchboard. Mr. Art Baker (right), District Manager in Fairfield of the United Telephone Co. of Iowa, recommended the Leich 40A PABX to the school. With him is Mr. Gene Savage, Equipment Superintendent of the United Telephone Co. of Iowa. He is shown examining the Leich equipment.

Features Your Customers Will Like

1. Uses Standard Leich telephones.
2. Any non-restricted inside station may call outside without waiting for the attendant.
3. Local links are not tied up on extension dialed calls to city trunks.
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depend on their research and development and promotional branches to bring forth regularly a new crop of revenue earners to keep pace with public taste and demand," he said. "I do not see how our telephone industry can fail to do likewise. I, for one, look forward to and confidently expect that five or 10 years from now a substantial proportion of our Independent company revenues will come from services and equipment not in general use today. I cannot even say off hand what they are or what they will be. It is just that I have that much confidence in our research development and promotional people to bring home the bacon.

"The danger in this situation as I see it for the Independent companies, is our traditional tendency to think of point-to-point communications as our own bailiwick of service area monopoly. The fact is that a good many so-called outsiders are trying to get into the act. By that I mean get into the telephone business through the indirect approach of making, selling, and distributing apparatus to be used in conjunction with telephone services, which our member companies now supply.

"This is another situation where the national association has tried to be vigilant. It has tried to foresee the threat of competitive operations, long before they actually develop to the point where they could seriously endanger the individual telephone company. It has not always been easy.

Texas Independents register in for the Texas convention which had a record-breaking attendance of over 700.

"You have probably heard about the fairly recent decision of the courts involving the use of a simple acoustical gadget that is supposed to make telephone service more confidential. The association in collaboration with the Bell System, went to bat on that proposition back in 1951 before the Federal Communications Commission. And the FCC condemned that device as a 'foreign attachment'. The U. S. circuit Court of Appeals for the District of Columbia (in one of the most surprising reversals since 'Serutan') decided that the device was all right and could be properly used in connection with telephone service without interference by telephone companies.

"That particular development was not to be disturbing in itself. But there will be other similar situations in the future, probably more disturbing. Much of the work which the USITA is doing today is devoted to this central problem of guarding the position of the telephone industry as the basic form of point-to-point communications in the United States.

"It might surprise you that that position has ever been questioned. But let me tell you that it *is* being questioned very definitely. There are even now various proceedings going on before the FCC and elsewhere involving the use of radio frequencies which the telephone industry needs, to carry out its job of meeting the communication service responsibilities of a growing nation, such as ours."

Stating that the telephone industry has come a long way from the basic land-wire pole line operations which characterized telephony in its early development, Mr. Power emphasized

An original oil painting used in General Telephone System national advertising and painted by Dom Lupo is presented by DONALD C. POWER, right, president of General Telephone System, to W. H. THOMSON, general manager for General Tel. Co. of the Southwest. The painting was awarded to the Southwest company for making the best over-all showing in the General system for the year 1956 in the sale of primary and extension stations.

that the telephone business today "is also an appliance business, just as much as in the case of the gas and electric utility businesses."

"Telephone business today is radio business," he said. "It is electronic business. It is scientific and research business. And most important of all, I think, we should be more conscious of the fact that it is a *competitive* business, in many respects, and will become increasingly so in the years ahead."

Tomorrow's Challenge

MR. WADDELL told the Texas Independents "If you don't grow, not alone in size to supply a bigger market, but in technological skill, in quality of service, in ability to perform your service economically, then it is my thesis that you will die. I submit the proposition holds for the individual firms, for the economy of Texas, and for the business system as a whole; it holds for the economic life of the nation. There is just absolutely no future in a state of suspended animation."

Pointing out that aggressive companies are reaching out to take advantage of present growth potentials, Mr. Waddell said, "They are not satisfied to tag along and grow as their industries or communities grow. These companies are reaching out for a larger share in their industry."

"One of our recent McGraw-Hill surveys, 'Plans for New Plants and Equipment'," revealed that two-thirds of the manufacturing companies were expecting their own sales to increase three times as fast as their industry sales, and they were planning their producing facilities accordingly. I think it is only fair to note that these were large companies, and for all I know, their optimism was proportionate to their size. But if we make a 50 per cent discount for excessive optimism, it still remains entirely clear that big and powerful companies are getting ready to occupy the room for growth that has been blocked out here. If as individual companies you don't follow the same general course it seems entirely clear to me that your future is at stake — and when I say you, I might just as well say 'we', because we are all in the same boat."

Pointing out that the challenge is "especially pertinent to you men in the telephone business — particularly in the smaller companies," Mr. Waddell stated that "throughout much of our discussion has run the theme of a faster pace of business, a faster pace of change, which brings with them a certainty of need for a greater volume of efficient communications. You have no other choice but to plan to provide it."

Members of the Texas Telephone Association Convention program committee are shown looking over the convention program. From left are RAY RED, General Tel. Co. of the Southwest; HOWARD HOUSLEY, Automatic Electric Sales Co.; and J. C. PAXTON, Southwestern Bell Tel. Co.

"Industries of all sizes, big and little, and the population generally, look to you to provide this increasingly complex service," he said. "Our tradition of small business-of-independent, localized business enterprise — is a strong one, and all large business want to see the small enterprises succeed and flourish. But the localized, small businesses must hold up their end of the bargain. They must grow in service and efficiency and size to meet the growth in demands made by their localities — they must plan to do this, and follow through on the plans — or someone else is going to take over the job. . . . "

Workshops

THREE workshops, plant, commercial and traffic were held during the last afternoon of the convention.

Plant Workshop speakers were Francis Winters and W. T. Reichel, Houston; George Hamburger, Copperweld Steel Co.; R. E. Payne, REA field engineer; Ben Averyt and Archie Sherrod of the Texas Highway Department; M. E. Barnes, Brownwood, and O. K. Hitchcock, Sweeney.

The Commercial Workshop speakers were A. R. Rucker, Palestine, and Ben Smith, the Southwestern Bell Telephone Co.

Participants in the Traffic Workshop were: Mrs. Winnie Burnett, Brownwood; C. A. Martin, San Angelo; Ezra Lowry, Brownwood; Hazel Harris, Brady; Betty Page, Bryan; Pearl McDonald, Sherman; Hazel Holley, Palestine; Hiram Jones, Tyler; John P. Smith, Brownwood, and N. T. Dunlap, Dallas.

The convention re-elected the following directors: M. S. Burton and Oscar Burton, Tyler; J. T. Chambers, Tenaha; D. H. Comparette, Jr., Kerrville; C. R. Dowd, Hawkins; C. H. Gilmer, Rocksprings; C. A. Hendrix, Brazoria; Guy Smelser, Bogata, and W. G. Wright.

R. A. Goodson, Dallas was elected a director to fill the vacancy caused by the resignation of W. L. Lindholm.

Hold-over directors are: W. S. Bain, San Antonio; Fabian Bearden, Baird; M. A. Clay, Lufkin; E. H. Danner, San Angelo; D. G. Garner, Jr., Nocona; H. Y. Price, Jr., San Marcos; A. L. Robb, Electra; T. A. Singer, Dimmitt; L. W. Spencer,

D. G. GARDNER, JR., of Nocona Tel. Co., president of the Texas Telephone Association, is pictured as he presides over one of the general sessions of the largest Texas Telephone Association Convention ever held. Seated is JACK HALEY, executive secretary of the association.

Dumas; D. T. Strickland, Brownwood, and W. G. Winters, Houston.

The directors re-elected the following officers: President, Mr. Gardner; First Vice President, Mr. Clay; Second Vice President, Mr. Bain; Treasurer, Pam D. Grinstead, Kerrville, and Executive Secretary, J. B. Haley, Austin.

Indiana Association Holds 37th Annual Convention

NEARLY 600 members of the Hoosier State's telephone industry moved into the Claypool Hotel, Indianapolis, last month and participated in the 37th Annual Convention of the Indiana Telephone Association.

Speakers at the two-day meeting included: Marvin C. Diefendorf, director of public relations, General Telephone Co. of Indiana, Fort Wayne; Harry R. Gruelle, public relations supervisor, Indiana Bell Telephone Co., Indianapolis; P. W. Ross, vice president, Indianapolis Power & Light Co., Indianapolis; Hugh A. Barnhart, second vice president, United States Independent Telephone Association, and president, Rochester (Ind.) Telephone Corp.; George A. Schumacher, secretary-treasurer, Indiana Telephone Association, Indianapolis; Hon. Crawford F. Parker, lieutenant-governor, State of Indiana; Dr. W. A. Paton, Sr., professor of Accounting, University of Michigan.

WITH HEAD of Pioneers: ROBERT DWYER, Brookston, manager, Prairie Telephone Co., Inc.; RALPH F. LUCIER, Warsaw, president, United Telephone Co. of Indiana, Inc., and president, Independent Telephone Pioneer Association; G. A. RICHWINE, Connersville, division manager, General Telephone Co. of Indiana, Inc.

Speakers at the Traffic-Commercial Conference, presided over by Virginia Williamson, United Telephone Co., of Indiana, Inc., Portland, were: LaMar Stoops, vice-president, Nappanee Telephone Co.; Logan Steele, Indiana Bell Telephone Co., Indianapolis; and Mayme Workman, Springfield, Ill.

Officers Elected are: President, Francis Simpson, general manager, The Eastern Indiana Telephone Co., Winchester; 1st vice-president, C. D. Ehinger, president, Citizens Telephone Co., Decatur; 2nd vice-president, Louis H. Meyer, president, General Telephone Co., of Indiana, Inc., Fort Wayne; and secretary-treasurer, George A. Schumacher, Indianapolis.

North Dakota Association Holds 49th Annual Meeting

THE NORTH Dakota Telephone Association, which claims "the biggest little convention of its kind

INDIANA ASSOCIATION officers for 1957-58, left to right: C. D. EHINGER, Citizens Telephone Co., Decatur, 1st vice-president; FRANCIS SIMPSON, The Eastern Indiana Telephone Co., Winchester, president; L. H. MEYER, General Telephone Co. of Indiana, Inc., Fort Wayne, 2nd vice-president; GEORGE A. SCHUMACHER, Indianapolis, secretary-treasurer.

BOARD OF DIRECTORS Indiana Telephone Association. From left to right, front row: LaMAR STOOPS, Nappanee; E. C. MULL, Knightstown; JOHN HARBAUGH, Sullivan; ROSCOE PONTIUS, Rochester; C. D. EHINGER, 1st vice-president, Decatur; FRANCIS SIMPSON, president, Winchester; L. H. MEYER, 2nd vice-president, Fort Wayne; R. V. ACHATZ, Aurora; S. K. TRIPPET, Princeton. Second Row, left to right: ROBERT DWYER, Brookston; CHARLES THOMAS, Roachdale; C. E. McCORMICK, Terre Haute; W. J. SCHEIDLER, Greensburg; R. F. LUCIER, Warsaw; JOHN GOODWIN, Brookville; R. R. HIRSCHMAN, Indianapolis; VIRL WATKINS, Princeton; GEORGE A. SCHUMACHER, secretary-treasurer, Indianapolis. FRANK E. BOHN, Fort Wayne; HARRY S. HANNA, Indianapolis, and BECHTEL WINGER, Sweetser, not present for picture.

in the United States," recently completed its most successful annual meeting. Registrations for the Forty-Ninth Annual Convention of the North Dakota Association totalled 163.

Featured speakers were Dr. Gordon Volkenant, a consulting engineer from Minneapolis, who spoke on "The Electron — The Atom — In Your Future"; Carl Rosenvold, sales manager for Suspension Insulators, spoke on the subject of "Rural Telephony," and Frank C. Mirgain, Dean of the School of Engineering at North Dakota Agricultural College, discussed "Training of Engineers." R. A. Patterson, Bismarck, N. D., discussed legislative problems in North Dakota. All sessions were well attended and the meetings were topped off by a fine banquet in the Town Hall of the Gardner Hotel.

New directors elected were: Don Brooks, Hazen; Gordon Brown, Enderlin, and John Nilsen, Nome. J. I. Shepard, Walhalla, was re-elected president; Mr. Brown was re-elected secretary-treasurer; and Mike Redding, Devils Lake, was elected vice president.

Dates for the 1958 convention were tentatively set for March 31 and April 1 and 2. — *Gordon Brown, secretary, North Dakota Telephone Association.*

Mansfield Telephone Co. Completes $1-Million Cutover

FOR ONE minute at midnight, June 1, Mansfield, Ohio, and its area was without telephone service as more than $1-million worth of switching equipment was cutover from the old building to the new exchange.

The cutover highlighted a week of entertaining by the Mansfield Telephone Co. with invited guests from state, county and city governments, city and county school officials, officers and directors of the Chamber of Commerce and press and radio executives for a dinner Saturday night and an open house Sunday, June 2, for telephone executives and operators from Ohio Bell and Independent telephone companies in Ohio, Indiana and Pennsylvania.

Gustav Hirsch, vice president, consulting engineer, and director of the company, said the Mansfield Telephone Co. has spent $3,156,515, in the past two years and "will spend probably one million more within a year to serve the needs of the people and to give them the kind of service they deserve."

On order at present are 1,000 additional lines for the Woodland Exchange, 600 additional lines for Trimble Rd. exchange and 300 lines for the Ontario exchange. Exchanges at Lexington, Belleville and Butler are being expanded.

Hirsch said the 1,000 new lines at Woodland are expected to be cut over in October and new lines at Trimble Rd. and Ontario stations early next year. The Lexington cutover is completed.

Anticipated to be the biggest exchange "in the next 10 years" will be the Mifflin Exchange.

DISCUSSING INDIANA convention program. Left to right: VIRL A. WATKINS, Princeton, general manager, The Princeton Telephone Co.; HARRY PURCELL, Rising Sun, assistant manager, Ohio River Telephone Co.; E. S. WELCH, Seymour, general manager, Indiana Telephone Corp.

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preferred by linemen
. . . electricians

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Now in Nylon Klein-Kord safety straps Klein still leads with the newest in safety equipment specially designed for use by utilities wherever power or communication lines are strung.

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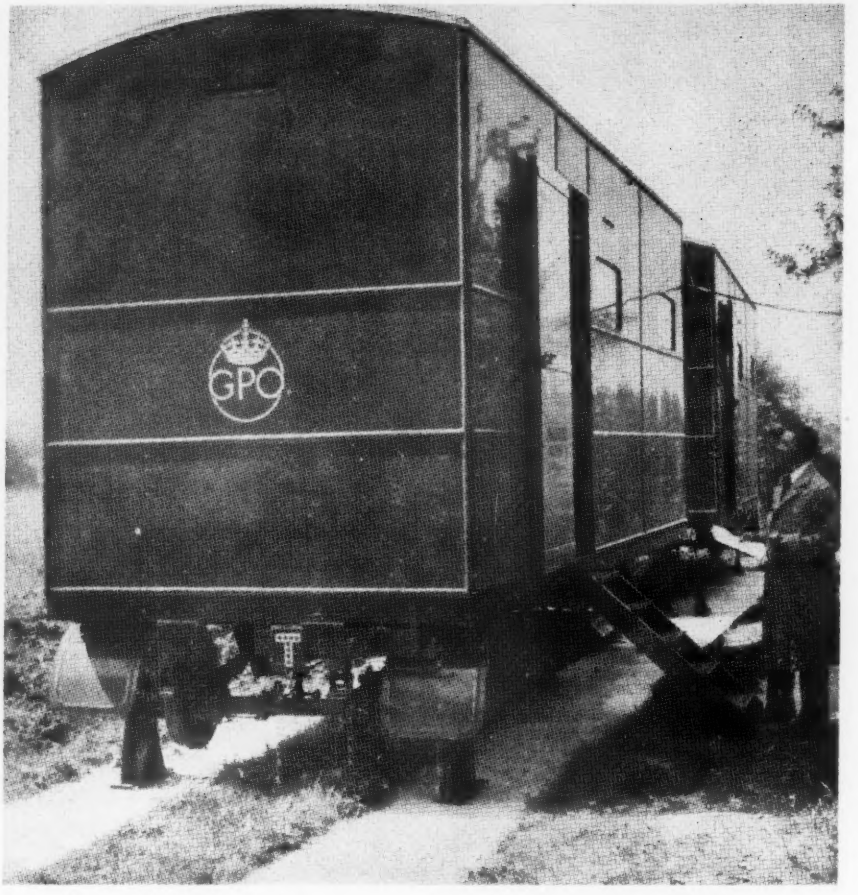


BRITISH POST OFFICE has approximately 111 mobile exchanges in service throughout Great Britain.

Report From England

British Post Office Uses Mobile Exchanges To Provide Temporary Facilities

By R. G. TUNGATE*

Introduction

THE TIME taken for the provision of a small automatic exchange may be considerable, particularly when difficulties in obtaining a site occur. The provision of a permanent exchange may require the finding and acquisition of a site, the renting or erection of a building, the delivery of the exchange equipment, the cabling of the units, the provision of the power plant and the final acceptance testing. The desirability of being able to provide an exchange on very short notice led telephone engineers of the British Post Office as long ago as 1938 to design and build an experimental trailer vehicle completely equipped as a small automatic exchange. Such exchanges have subsequently proved to be of considerable value.

Some of the circumstances for which a temporary unit is required to serve an area until a permanent exchange can be installed are as follows: —

(a) Replacement of a small manual exchange, following the sudden termination of the services of a caretaker-operator by some unforeseen circumstance.

(b) Replacement of a small automatic exchange while installation of a larger exchange takes place in the original building.

(c) Replacement of small exchanges damaged by fire or flood, or other causes.

(d) Provision of a new exchange

* *Mr. Tungate is with the Midland Regional Headquarters of the British Post Office.*

to meet unforseen development.

(e) Temporary relief to an existing exchange.

Development of Mobile Automatic Exchanges

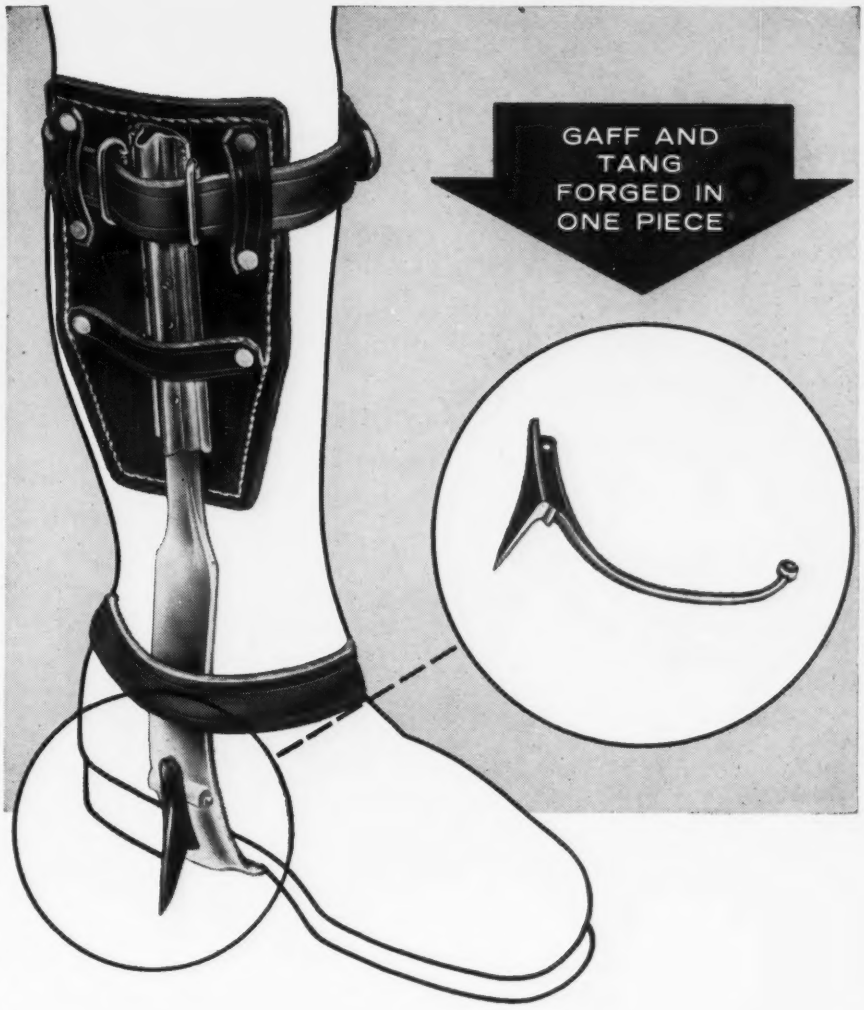
THE EQUIPMENT in the first MAX to be introduced was built into a 4-wheel trailer vehicle of the type used by the Defense Services, and the positioning of the apparatus and power plant was decided upon after experimenting with a scale model. A standard 100-line exchange was installed, together with two sets of traction-type batteries and duplicate power plant (A. C. rectifier and gasoline-engine driven charging set).

In 1948, with 20 of the 100-line Mobile Automatic Exchanges in use, it was decided to introduce a 200-line type. Owing to legal restrictions on the permissible size of vehicles which could at that time be used (22 ft. overall length and 7 ft. 6 in. overall width), it was found necessary to house the equipment in two vehicles. Trials were made using mechanical "horses" and trailers, each forming a 3-axle drop-frame articulated combination, but later designs reverted to the use of 4-wheeled trailers having flat floors.

100-*line MAX*

THE LATEST type of 100-line MAX utilizes a trailer 17 ft. long and 7 ft. 6 in. wide, with an entrance door in one side. The equipment consists of a standard 100-line (Strowger) Unit Automatic Exchange, and the line side of the MDF is cabled to a mechanical joint (i. e. one to which access can be gained without unsweating the sleeve). Connection to the outside cables is made in this joint. The power plant operates on a charge-discharge basis using either AC mains and rectifiers or a 500-watt gasoline engine driven generator. Both mains and battery lighting are installed.

The weight of the vehicle is approximately 6 tons and a good foundation is required on site, consisting of heavy bulks of timber or some other solid base, if necessary. When possible, the towing vehicle is used to maneuver the MAX into position, otherwise blocks and tackle or a winch are used. In areas where there are liable to be severe snow storms, the trailer should, where possible, be sited so that the louvres in the engine-set doors are sheltered from the pre-



Here's why M-S-A–Brooks Adjustable Climbers provide greater safety–durability

Gaff and tang forged in one piece: That's a statement that makes plenty of safety-sense to workers who depend on a small "tooth" of steel to support their weight high above the ground. This feature is exclusive with the M-S-A–Brooks Adjustable Climbers. And there's more to the story. The gaffs and leg irons are forged from high quality, medium carbon steel, heat treated to assure the proper balance of hardness, toughness and ductility.

Inspection plays an important role, too. Every leg iron and gaff is examined by the magnetic particles method. Statistical sampling is used for impact, absorption, Rockwell hardness and metallurgical tests. And all this means greater safety, longer wearing qualities . . . less maintenance.

Pads and straps are made of top grain steer hide with chrome leather reinforcement on the leg side of the calf pad. The result—maximum comfort on the job.

Write for complete details.

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1347 WEST FIFTH AVENUE
COLUMBUS 12, OHIO

January 7, 1957

Automatic Electric Sales Corp.
1033 West Van Buren Street
Chicago, Illinois

Attn: Mr. D. H. Deaver, President

Subj: Warren Telephone Company, Warren, Ohio
SATT Equipment

Dear Sir:

The initial installation of SATT equipment for subject company was placed in service on December 2, 1956.

Approximately fifty percent (50%) of our outward toll is being processed by this equipment and our toll relief was immediate.

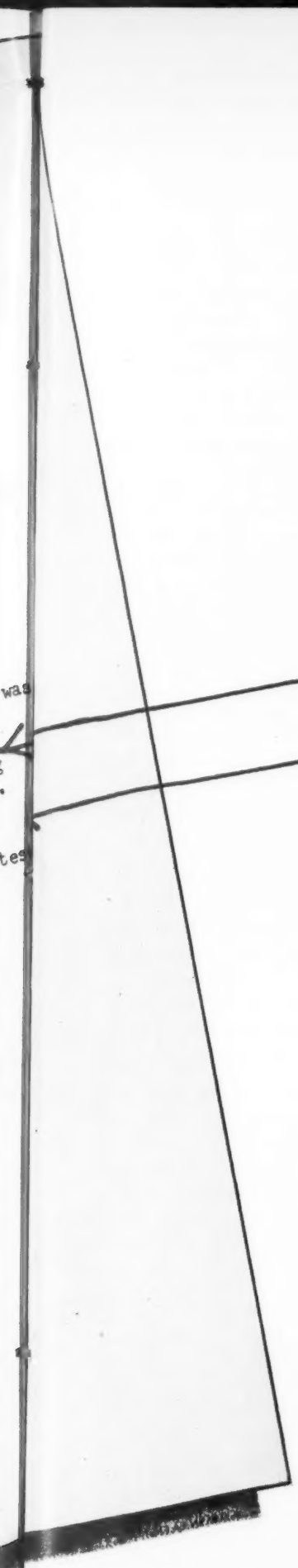
We want to thank you for the superior performance of your engineering and installation staff on this project and it attests to the excellent performance of AE equipment and personnel.

Very truly yours,
GUSTAV HIRSCH ORGANIZATION, INC.

R. E. Johnson
Chief Equipment Engineer

REJ/cjw

cc; Mr. Hirsch
Warren Telephone Company



SATT can do the same for you—
you'll be happy with the job too!

If *you* can see an automatic toll ticketing problem coming up, ask us about it. Our experienced engineers will be glad to help you—and you'll be mighty glad they did! Address: *Automatic Electric Sales Corporation, 1033 W. Van Buren St., Chicago 7. Or call HAymarket 1-4300.*

AUTOMATIC ELECTRIC

A member of the General Telephone System
One of America's great communications systems

GENERAL TELEPHONE SYSTEM

vailing winds. To prevent damage to the tires when the vehicle has been placed in position, the wheels are removed and replaced by triangular axle stands bolted to the hubs.

An effective earth electrode system is provided and connected to the MAX before any other connection is made, and the mains supply is taken via an earth-leakage circuit breaker as a safety precaution. The earth connection for the circuit breaker is additional to, and separate from, that provided for the equipment. The telephone cables are led into the exchange through a flexible metal tube.

Before removing the exchange from the site, the external cables are disconnected in the mechanical joint, and the flexible metal tube removed. The MDF jumpers are also recovered. After insuring that both batteries are in a charged condition, arrangements are made for the power wires and earth systems to be removed. The contents of the MAX are then checked against the inventory and any discrepancies made good.

200-line MAX

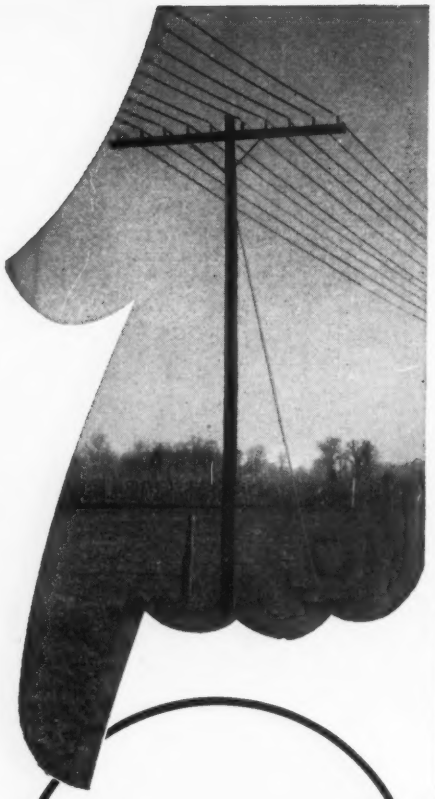
TWO VEHICLES are used to house the 200-line equipment, and apart from the necessary coupling cables between the vehicles, the exchange is entirely standard, all cabling between the various units in each vehicle being ready provided. Each vehicle is 22 ft. long, and 7 ft. 6 in. wide and weighs approximately 8 tons when fully equipped. The bodies are coach-built and heat-insulated, having aluminum outer panelling and hardboard interiors. Each is provided with an exhaust fan, wired-glass windows and main lighting.

The power equipment and lighting circuits are arranged to work from a single phase supply, and an emergency driven generator is not in this case provided. Entry tubes for leading-in overhead power cables are fitted in the end wall of each vehicle. Two main batteries are installed, together with counter-EMF cells and 2 positive batteries.

The arrangements for installing and recovering the 200-line MAXs are similar to those for the 100-line type, but to facilitate inter-vehicle connection, 2½ in. diameter flexible metal hoses are provided, incorporating quick-action couplings and blanking caps for tubes not in use.

Conclusion

AT THE present time approximately thirty 100-line MAXs and eleven 200-line MAXs are in service throughout Great Britain and serve a useful purpose which has adequately justified the preliminary work carried out almost 20 years ago. Acknowledgement is due to the Engineer-in-Chief of the British Post Office for permitting publication of this article.—*R. G. Tungate.*



Crapo
HTL-135
INDIANA STEEL & WIRE CO.
MUNCIE, INDIANA U.S.A.

LOWER
Cost Per Mile

● Efficient rural telephone circuits can be built at minimum overall cost where Crapo HTL-135 High-Tensile Line Wire is used to full advantage. For Crapo HTL-135 makes possible spans up to 350 feet in heavy, 540 feet in medium and 650 feet in light loading districts. Longer spans mean fewer pole structures with substantial savings in material and labor costs per mile.

The rugged tensile strength of Crapo HTL-135 and its heavy galvanized coating provide dependable and economical service life on typical rural lines.

Ask your jobber for details or write direct for engineering data!

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STEEL & WIRE COMPANY
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Rocksprings & Nueces Tel. Buys Utopia (Tex.) Tel. Co.

NEGOTIATIONS were completed last month by the Rocksprings & Nueces Telephone Co., Rocksprings, Texas, for the purchase of the Utopia (Texas) Telephone Co. from Mr. and Mrs. Henry Burns. The transaction was retroactive to May 1, according to Carson Gilmer, manager for the Rocksprings and Nueces Canyon firm.

Commonwealth Tel. Issues Stock to Institutional Investors

THE COMMONWEALTH Telephone Co., Dallas, Pr., has placed $750,000 of 6 per cent cumulative preferred stock with institutional investors.

Mutual of New York purchased one-third of the issue, and the remainder of the securities were shared by Fidelity Mutual Life Insurance Co., Home Life Insurance Co., of America, State Farm Mutual Automobile Insurance Co., National Life Insurance Co., and Ohio National Life Insurance Co.

Proceeds of the sale will be used to reduce outstanding bank loans. The financing was arranged by Eastman Dillon. Union Securities & Co. acting as agent for the borrower.

Commonwealth Telephone Co. was formed in 1950 as the result of mergers and consolidations among several northeastern Pennyslvania telephone utilities.

J. C. Shrum Purchases Huntsville, Ark. Company

THE ARKANSAS Public Service Commission has approved sale of the Madison County Telephone Company, Huntsville, to J. Curtis Shrum and Roma Jean Shrum, Big Cabin, Okla., for $48,000. The exchange serves 350 customers.

For faster communications accounting...

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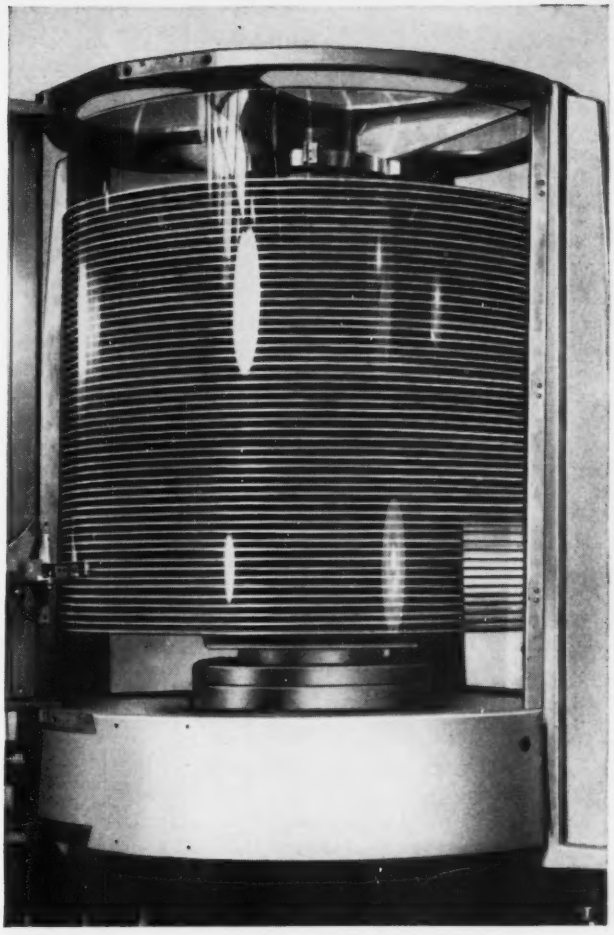

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...newest concept in communications record-keeping!

"SINGLE STEP" data processing means the ability to process each transaction just as it occurs—at the same time updating every related record on file!

This beneficial record-keeping concept is made possible through the exclusive features of the IBM 650 RAMAC—first name in Random Access Method of Accounting and Control systems.

With a capacity of 6,000,000 to 24,000,000 digits of facts and figures, IBM's 650 RAMAC can put the finger on any one fact *instantly*—for processing or reading out—without time-consuming searching or sorting!

At interrogation stations of the 650 RAMAC, direct inquiry can be made into this tremendous memory file. Through automatic typewriters at these locations, RAMAC instantly provides answers to specific questions that reflect the latest transaction in *any* accounting record!

To bring *your* company up-to-date on this latest great electronic development with its many benefits for the communications industry, simply call your local IBM representative now or write directly to . . .

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DATA PROCESSING • ELECTRIC TYPEWRITERS • MILITARY PRODUCTS • TIME EQUIPMENT

RAMAC units, of 6,000,000-digit capacity each, transform this IBM 650 "Electronic Workhorse" into a "single step" data processing system for the communications industry.
IBM 650 DATA PROCESSING SYSTEM

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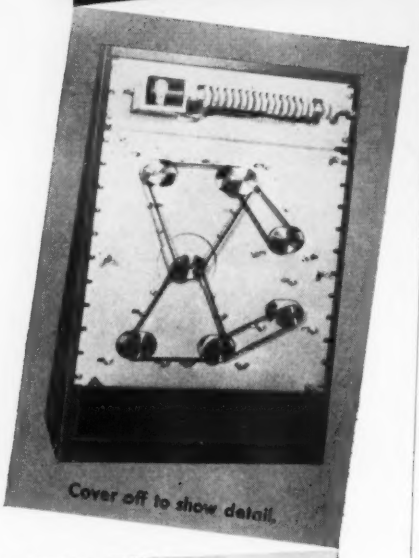
HOLTZER
-CABOT

A Low-cost Multi-Frequency Ringing Panel with power savings up to $250 a year



Cover off to show detail.

This 25 watt five-frequency ringing panel can generate harmonic, synchromanic or decimonic ringing frequencies — *all at the same low cost.*

Permanent magnet-type generators are short-circuit-proof. Elimination of slip rings, brushes and/or commutators reduces maintenance costs. Constant clear tones. Low harmonic content eliminates cross ringing.

This compact unit is 21" high by 19" wide. Weighs approximately 120 lbs. (Also available in 23" or 30" panel width.) D.C. unit is governor controlled. Available with interrupter and tone alternator as optional equipment.

Order direct from Holtzer-Cabot or through the following telephone equipment manufacturers:

- Automatic Electric Company
- North Electric Company
- Kellogg Switchboard and Supply Company
- Stromberg-Carlson
- Leich Electric Company
- Federal Telephone and Radio

HOLTZER-CABOT TELEPHONE EQUIPMENT
Division of
NATIONAL PNEUMATIC CO., INC.
125 Amory Street, Boston 19, Mass.

THE MODERN LINEMAN: ***Dick Loran,*** **of General Telephone Co. of California's plant department in Long Beach, replete with fibre glass hat and work gloves observes the job ahead of him as he stands on the electrically insulated platform of the Telsta Truck. The gate of the platform is double locked against accidental opening. Behind him, to his left, is the microphone of the intercom system which enables him to direct the driver.**

Giant Mechanical Wizard

New Unit Lifts Workers To The Job: Proves In As Valuable Job-Helper

By GEORGE A. BRIDGES* ·

"WIZARD" helps construction crews do a faster, smoother job.

DID YOU know that a giant "mechanical wizard," better known as the Telsta truck, has begun to revolutionize telephone construction operations for the General Telephone Company of California?

Although a new addition to the West Coast company, the versatile "wizard" has already proved its worth by helping General's construction crews to do a faster and safer construction job and at the same time minimize their own physical fatigue.

Basically, the Telsta Electric Lift consists of a basket which supports a workman and is mounted on the end of a telescoping boom. The boom, in turn, is held in place on a revolving turret mounted on a 2-ton, four-wheel drive truck.

With a little imagination a "sidewalk engineer" observing the truck in action might compare it to a beast of the paleolithic era with its long mobile neck moving up and down or sideways, poking its nose into everything within range.

Returning to reality, however, the lift is actually designed to support a workman aloft and provide him with maneuverability while performing such operations as placing cable molding, trimming trees, placing aerial cable or suspension strand and many other duties. Linemen making use of this lift do not have to use climbers, for they do not have to climb.

The control level in the basket, incidentally, is called a "joy stick" and it permits the workman to move himself up or down, from side to side, or change his position entirely if his work demands it. There are elec-

**Mr. Bridges is press relations coordinator for the General Telephone Co. of California.*

Where is the Guy who put up this guy?

He's doing something else—

maybe he's putting up another one.

Anyway, he did this job all alone

in less than five minutes—

by himself.

STRANDVISE is made
for strand sizes 3/16", 1/4", 5/16", 3/8", and 7/16"
NO MATTER THE GRADE.
Please pick your size, fill in
the coupon and mail it today.

Reliable

Reliable Electric Company
West Carroll Avenue
Chicago 12, Ill.

Mr. Reliable:

WE DON'T BELIEVE IT BUT—we want to give STRANDVISE a fair trial. You may send 4 of them size ( ) without charge. Better send your instructions for installing and a catalog-price sheet, too.

Signed_____

Company_____

Street No._____

City_____ State_____

This STRANDVISE guy was put up complete before any tensioning tools were applied to the strand

60 YEARS OF INDEPENDENT TELEPHONY 1897-1957

All supplies you need for small cable jobs are in stock at Suttle for your convenience. Get them all in one shipment. And those emergencies on big jobs can be suppressed by our prompt handling of your needs.

Ankoseal Plastic Cable

Standard 22-gauge in stock from 11 to 101 pair for delivery in less-than-reel lengths. The SelfSupporting 19-gauge is carried in 6, 11, 16 and 26 pair for less-than-reel lengths.

Channel Supports

Plenty of these in assorted sizes for the small jobs.

Terminals & Accessories

About any style terminal you prefer can be delivered promptly. Also any other accessories such as messenger, splicing materials, grips, etc. are on hand for quick shipment.

You will like Suttle's attention to your orders or inquiries about cable for those big jobs too.

See Your SUTTLE Catalog

Serving Independent Telephone Men Since 1910

Suttle EQUIPMENT CO.

LAWRENCEVILLE ILLINOIS

trical outlets in the basket so that he can plug in power tools or lights with ease . . . and to top that, an intercom system enables the man in the tower to converse with the truck driver in the cab in a normal tone of voice.

The lineman has now become an "outdoor executive" — no longer fatigued by climbing poles or walking from one area to another, weighed down by heavy equipment. Furthermore, he is saving valuable time.

This "automatic dinosaur," though not the epitome of grace in body design, is so effective that General plans to use them to serve the company's Long Beach, Covina, Whittier and Pomona areas.

Voicing the opinion of telephone men who have seen the Telsta truck in action or have operated it, Robert Mahrt, Long Beach lineman said recently, "This mechanical wizard is the answer to a lineman's prayer."

Since Telsta trucks are expensive, the General Telephone company spent a lot of time in research determining whether this truck could perform enough functions to justify its cost. After intensive investigation, company officials decided that the "pro's" heavily outweighed all arguments and the order was placed with the Telsta Corp. of Redwood City, Calif.

Among other things, it was discovered that this automatic life was versatile enough to handle construction and cable maintenance; that the long telescopic boom was able to span parked vehicles, busy highways and other "awkward" work areas so that the lineman could repair or install an overhead aerial cable; that the electrically powered boom could also lift a lineman to any level up to 40 feet.

Furthermore, General Telephone company officials learned that the Electric Lift was equipped with a dual control system which enables it to be operated either by the crewman in the basket or by the driver in the cab.

Safety features were numerous, too, they discovered, adding to the desirability of such a purchase. Limiting switches which will automatically stop the boom motor if the points of maximum extension or retraction of the boom are reached, are provided. These switches will also stop the elevating motor from raising the boom past the point of maximum elevation or from lowering the boom when the elevating chain becomes slack due to the boom being supported by its cradle or to the basket resting firmly on the ground.

READY FOR THE TAKEOFF: ***Dick Lovan,*** **General Telephone Co. of California lineman of Long Beach, stands in the basket of the Telsta Truck and surveys his ultimate objective . . . the telephone pole and cable 22 feet up. By exerting a little pressure with his thumb on the "joy stick" Dick can move himself up or down and from side to side. The "joy stick" is designed so that an upward lift on it will activate the elevating motor to raise the boom, whereas downward pressure will reverse the motor and lower the boom. Tilting the control to the right or left will rotate the boom either to the right or left.**

The electric motors are protected from continuous overloading by thermal relays. An automatic clutch is provided in connection with the rotating motor to prevent severe jolts when rotating the unit. This clutch is designed to slide should rotation be attempted while the basket or boom is in contact with a rigid object.

The lift is designed to withstand a vertical load of 500 pounds, with the boom fully extended in any position, subject to the stability limits of the truck to resist overturning. This 500 pound limit includes the combined weight of man, tools, materials and any other external load applied to the boom or basket.

One of the most interesting features of the Telsta truck is the "joy stick" — that little mechanical control that tells the lift what to do. This control is equipped with a thumb operated micro-switch in its top. The micro-switch must be depressed to place

ARRIVING AT HIS OBJECTIVE, Lineman *Lovan* adjusts the cable spinner as it lashes the cable to the messenger and spins it. The job is done in record time.

the control in operation. It will automatically stop all operations if released. The "joy stick" is so designed that an upward lift on it will activate the elevating motor to raise the boom, whereas downward pressure on it will reverse this motor and lower the boom. Tilting the control to the right or left will rotate the boom to the right or left, respectively, while tilting it forward will activate the motor extending the boom. To retract the boom you merely pull the control backward. It is also possible to activate all of the motors either separately or in any combination. For example, if the control is lifted, tilted to the left and forward, the boom will elevate, rotate to the left and extend simultaneously, resulting in movement of the basket in the direction in which the "stick" was moved.

In summing up the over-all feeling of telephone men toward the Telsta truck, one General Telephone company official expressed this very well when he said: "It is too soon to give an absolute evaluation of the total merits of this truck as applied to the telephone industry, but we have found that one thing is certain, aside from the many safety features offered . . . time is being saved and since time is money, what better way can a new addition to plant pay for itself?"—*George A. Bridges.*

North Pittsburgh Tel. Places Preferred Stock Issue

LAST MONTH the North Pittsburgh Telephone Co., Gibsonia, Pa., placed $500,000 principal amount ($100 par value) Cumulative Preferred Stock. Fidelity Mutual Life Insurance Co. purchased $300,000 and Berkshire Life Insurance Co., $200,000. Proceeds will be used to finance a portion of the company's expansion and modernization program. The sale was arranged through Arthurs, Lestrange & Co. of Pittsburgh.

Illinois Consolidated Approves $7,500,000 Construction

R. A. LUMPKIN, president of Illinois Consolidated Telephone Co., Mattoon, Ill., disclosed last month that his company has recently approved a seven and one-half million dollar construction program for its properties in Central Illinois. Plans call for the conversion to dial of 13 central offices.

"We have planned that our system will be 100 per cent dial operated by the end of 1961," said Lumpkin. "The program is nevertheless dependent upon two vitally important factors, first, the company's ability to finance the undertaking and second, its supplier's capacity to manufacture and install the additional equipment within the time we have allotted to the project.

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Easy To Use—Light and compact. Handles easily—even in the tightest spots. Fully adjustable gas pressure regulator assures perfect flame control.

Dependable—Unaffected by wind or weather. You can be sure of the same flame every time. Ruggedly built for years of trouble-free service under everyday, "on-the-job" conditions.

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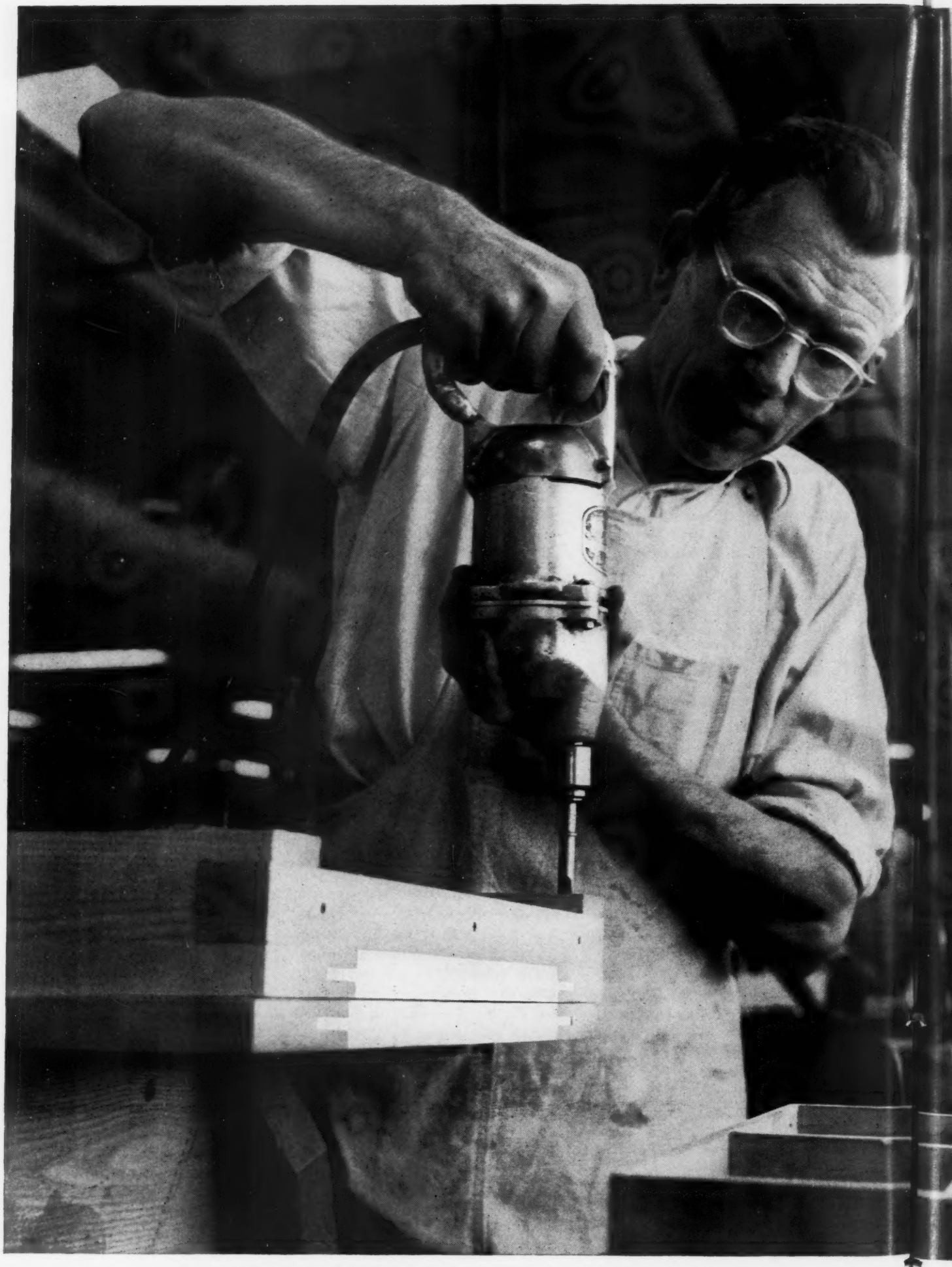

PORTRAIT OF AN INDUSTRY

The Cabinetmaker

To a world of wire, cable and switching equipment he brings his tools—and a way with wood. The fine switchboard cabinets and telephone booths he builds are his contribution to our job of providing good telephone equipment for the Bell telephone companies.

Like the lineman and the operator, the cabinetmaker lends his special skill and talents to help achieve the common goal of the telephone industry . . . providing better telephone service for America.

Western Electric

MANUFACTURING AND SUPPLY UNIT OF THE BELL SYSTEM

TELEPHONE ENGINEER & MANAGEMENT'S

HANDBOOK DATA SHEETS

Prepared By

JOHN S. REED

Reliable Squeez Taps

Reliable Squeez Taps are used for connecting drop or bridle wire to line conductors without the need for cutting the line wires. As shown in the illustrations below, a section of the top sleeve is open for parallel onset to the line wire. Compression with the proper tool and die closes the open section tightly onto the wire.

Kind of Conductor To Be Tapped	Code No.	Conductor Gauge AWG	to	Conductor Gauge AWG	Conductor Mils	to	Conductor Mils	Die Groove	No. of Compressions On Each End
	T-17-18-B-2	17 or 18		17 or 18	045-040		045-040	B	3
	T-14-16-B-2	14 or 16		14 or 16	064-051		064-051	B	3
	T-12-C-1	12		12	081		081	C	3
	T-12x17-18-C-1	12		17 or 18	081		045-040	C	3
	T-12x14-16-C-1	12		14 or 16	081		064-051	C	3
Copper	T-10-D-1	10		10	102		102	D	4
Line Wire	T-10x17-18-D-1	10		17 or 18	102		045-040	D	4
to Copper	T-10x14-16-D-1	10		14 or 16	102		064-051	D	4
Wire, or	T-10x12-D-1	10		12	102		081	D	4
Bronze or	T-9-D-1	9		9	114		114	D	4
Copperweld	T-9x17-18-D-1	9		17 or 18	114		045-040	D	4
Drop or	T-9x14-16-D-1	9		14 or 16	114		064-051	D	4
Bridle	T-8-D-1	8		8	128		128	D	4
Wire	T-8x17-18-D-1	8		17 or 18	128		045-040	D	4
	T-8x14-16-D-1	8		14 or 16	128		064-051	D	4
	T-8-J-1	8		8	128		128	J	4
	T-8x14-16- J-1	8		14 or 16	128		064-051	J	4
	T-6- J-1	6		6	162		162	J	4
	T-6x14-16- J-1	6		14 or 16	162		064-051	J	4
		BWG	to	AWG					
	T-14x17-18-C-2	14		17 or 18	083		045-040	C	3
	T-12x17-18-D-2	12		17 or 18	109		045-040	D	4
Steel	T-12x14-16-D-2	12		14 or 16	109		064-051	D	4
Line Wire	T-10x17-18- J-2	10		17 or 18	134		045-040	J	4
to Copper,	T-10x14-16- J-2	10		14 or 16	134		064-051	J	4
Copperweld	T- 9x17-18- J-2	9		17 or 18	148		045-040	J	4
or Bronze	T- 9x14-16- J-2	9		14 or 16	148		064-051	J	4
	T- 8x14-16- J-2	8		14 or 16	165		064-051	J	4
	T- 8x12- J-2	8		12	165		109	J	4
		BWG	to	BWG					
	T-14-C-2	14		14	083		083	C	3
Steel	T-12-D-2	12		12	109		109	D	4
Line Wire	T-12x14-D-2	12		14	109		083	D	4
to Steel	T-10- J-2	10		10	134		134	J	4
Line Wire	T- 9- J-2	9		9	148		148	J	4
	T- 8- J-2	8		8	165		165	J	4

A TELEPHONE ENGINEER OPERATING MANUAL

RURAL DISTRIBUTION WIRE

By JOHN S. REED

THE RURAL distribution wire has proved to be immensely popular with telephone companies as a type of wire facility for supplementing open wire or cable. It was originally designed as an answer to an urgent need in rural areas where existing facilities had to be expanded to meet rapidly growing demands for telephone service.

This wire is extremely light in weight and consists of a number of insulated wire pairs stranded around an insulated high strength steel wire which supports the pairs. Each copper conductor is insulated with polyethylene covered with a layer of tough polyvinylchloride. The polyethylene insulation is generally about 0.020 inch thick and the polyvinyl jacket approximately 0.010 inch thick, providing a stated dielectric strength of approximately 20,000 volts between conductors.

One conductor of each pair is colored for identification purposes. Each pair has a different length of twist to minimize crosstalk between adjacent pairs. The pairs are spiralled around the support wire with a long lay to facilitate spreading apart the pairs at support points or at taps in the line for drop connections.

The steel support wire has 1800 pounds breaking strength. It is insulated with a polyethylene jacket for high dielectric strength between support wire and the conductors, and to provide a cushion for the conductors. This property of high dielectric strength is especially important where the cable is located in areas of severe exposure to lightning or is carried jointly with a power line.

The construction of the rural distribution wire is illustrated in *Figure* 1.

The rural distribution wire is employed for the following purposes:

(1) To extend telephone circuits into sparsely settled areas, where regular sheathed cable would be too expensive for serving the relatively few subscribers there.

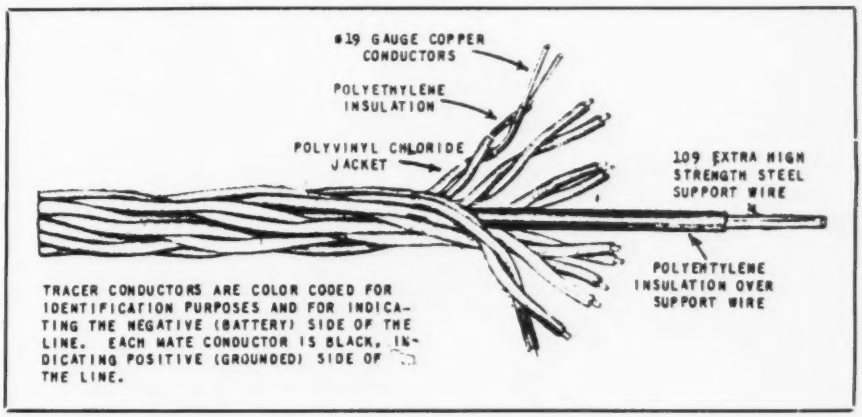
#19 GAUGE COPPER CONDUCTORS
POLYETHYLENE INSULATION
POLYVINYL CHLORIDE JACKET
109 EXTRA HIGH STRENGTH STEEL SUPPORT WIRE
POLYETHYLENE INSULATION OVER SUPPORT WIRE
TRACER CONDUCTORS ARE COLOR CODED FOR IDENTIFICATION PURPOSES AND FOR INDICATING THE NEGATIVE (BATTERY) SIDE OF THE LINE. EACH MATE CONDUCTOR IS BLACK, INDICATING POSITIVE (GROUNDED) SIDE OF THE LINE.

FIG. ONE — Construction of 6-pair rural distribution wire.

(2) As a relief facility in smaller towns to release additional pairs in farm cable serving rural areas, also for short extensions from main cable in town to avoid placing of expensive branch cable or excessive runs of drop wire, as shown in *Figure* 2.

(3) As a distribution facility in suburban developments to defer the placing of regular cable.

(4) In situations where the addition of open wire circuits would require replacement of existing poles due to their inadequate height or strength for the additional circuits, as illustrated in *Figures* 3 *and* 4.

(5) In situations of severe interference from trees and brush along

FIG. TWO — Stringing rural distribution wire in a small town for extension on main cable to replace open-wire lead in bad tree situation.

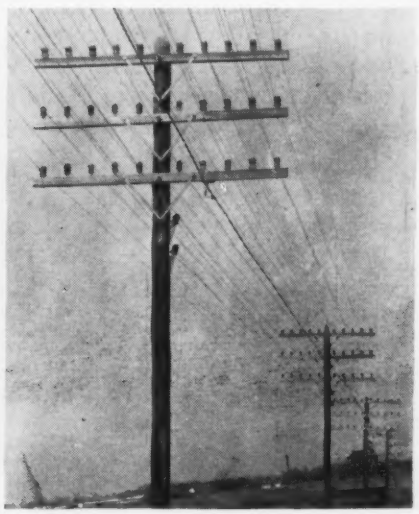

FIG. THREE — Six-pair rural distribution wire supported on crossarms in pole lead for adequate clearance from ground.

A TELEPHONE ENGINEER OPERATING MANUAL

RURAL DISTRIBUTION WIRE

(Continued from page 63)

the right of way, where the rural distribution wire can be employed to replace the portion of the open wire lead through the interfering area, as indicated in *Figures* 2 *and* 5.

(6) For temporary service in situations where a large number of excessive lengths of drop wire runs would otherwise be required.

(7) For use following storms disrupting service over open wire lines or to provide temporary service while existing lines are being rebuilt or moved as in highway reconstruction.

The rural distribution wire can be obtained in a variety of sizes ranging from 1-pair through 2-, 3-, 4-, 5-, 6-, 11-, and 16-pair. The 6-pair is the most commonly used size. The 2- and 3-pair wires are considered ideal for high voltage joint construction, due to savings by the elimination of special transposition brackets on every other pole as required in open-wire joint use. The 11-pair and 16-pair wires are favored by many companies for more extensive distribution in areas of subscriber growth.

The various sizes of rural distribution wire are obtainable with 19 gauge conductors and 109 high strength steel support wire. Companies in the Bell System have been using a type of distribution wire in 16-pair size designated as urban wire which has 24-gauge conductors. This wire facility is primarily intended for use in rapidly developing areas

FIG. FIVE — This rural distribution wire lead replaces an open-wire lead

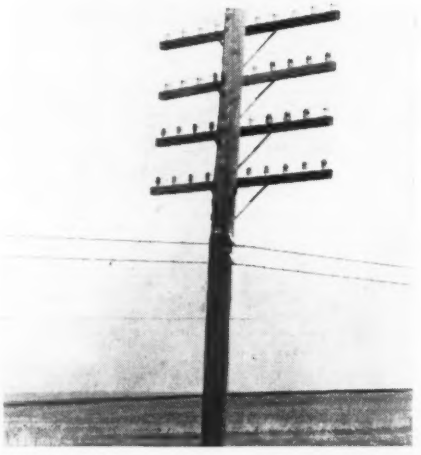

FIG. FOUR — Two 6-pair rural distribution wires in same lead providing equivalent of 12 circuits on three crossarms. With additional crossarms, ground clearance would have been insufficient.

to enable service to be provided until sheathed cable can be permanently placed. The smaller gauge conductors increase the transmission loss and make necessary the installation of shorter lengths of urban wire than would be possible with the 19 gauge distribution wire.

The conductors of rural distribution wire are colored in accordance with a color code for easy identification of the conductors. See *Table One* for a typical color code arrangement.

Typical installations of rural distribution wire are shown in *Figures* 2 *to* 6.

Experience with installations of rural distribution wire indicates this wire facility to have the following advantages:

(1) Since the pairs are not covered with a jacket as in the case of sheathed cable, they are available for making connections at any point along the line. Splicing for these connections is a simple operation and terminals are available for connecting subscriber drops at the desired points.

(2) The distribution wire can be installed on existing poles either directly or on crossarms without greatly reducing ground clearance (*Figure* 3, and can be readily salvaged for re-use elsewhere.

(3) This wire facility is less susceptible to noise induction than open wire, though not quite so good as lead-covered cable in that respect. The transmission loss of the rural distribution wire under dry weather condition is about the same as that of 19-gauge exchange cable.

(4) Installation costs of the 6-pair rural distribution wire are comparable to that of 6-open wire circuits (one crossarm and one pair of pole brackets.) Further savings may be

Pair Number*	Conductor**	Mate
1	Blue	Black
2	Red	Black
3	Green	Black
4	Brown	Black
5	Slate	Black
6	Yellow	Black
7	Blue	Red
8	Green	Red
9	Brown	Red
10	Slate	Red
11	Blue	Yellow
12	Green	Yellow
13	Brown	Yellow
14	Slate	Yellow
15	Blue	White
16	Green	White

*Pair 1 — For 1-pair rural distribution wire.
Pairs 1 to 2 — For 2-pair rural distribution wire.
Pairs 1 to 3 — For 3-pair rural distribution wire.
Pairs 1 to 4 — For 4-pair rural distribution wire.
Pairs 1 to 5 — For 5-pair rural distribution wire.
Pairs 1 to 6 — For 6-pair rural distribution wire.
Pairs 1 to 11 — For 11-pair rural distribution wire.
Pairs 1 to 16 — For 16-pair rural distribution wire.

**Generally connected to negative (ring) or battery side of line.

TABLE ONE.

. . . **BECAUSE** Lenkurt Carrier is the simplest, fastest, most economical way to add profitable new circuits, using present wires. Only with Lenkurt Carrier do you benefit from advanced engineering features like these: direct interconnection at carrier frequencies . . . exclusive "building-blocks" concept of interchangeable, plug-in components . . . utmost simplicity of installation, maintenance and expansion.

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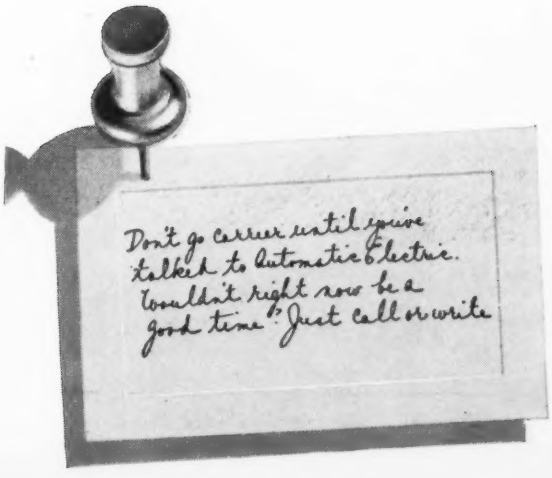
. . . **AND BECAUSE** Lenkurt Carrier Systems are engineered *by* telephone men *for* telephone company operations.



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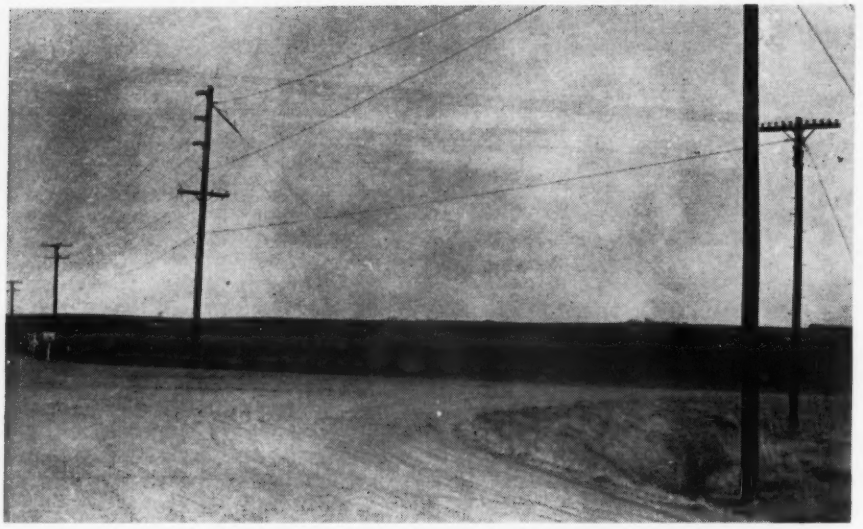


FIG. SIX — Rural distribution wire entering a power line section in joint use. Because of the high voltage involved, open-wire construction would have required special transpositions, resulting in additional expense.

obtained through reducing tree trimming and brush removal work along the right of way. In using the rural distribution wire, the maintenance cost is considered to be approximately the same as that of a 4-wire lead with tree trimming costs about equal to that of a cable lead. It is possible that this wire facility has a service life of 15 years.

The maximum lengths of rural distribution wire that can be placed depends on the transmission loss that can be tolerated. In general, it may be stated that 19 gauge distribution wire can be placed in lengths of up to 3½ miles without loading and 9½ miles with maximum loading and still provide satisfactory transmission.

Characteristics of Rural Distribution Wire

THE KIND of wire covering used has an important bearing on the long life characteristics of this wire facility. This is particularly the case where different kinds of plastics are used in intimate contact with each other as in the case of the polyethylene insulation and polyvinyl jacket. These two plastic compounds must be compatable with each other and at the same time have the proper electrical and mechanical properties that will assure satisfactory operation and long life of the rural distribution wire.

The polyethylene insulation on the conductors and the support wire has excellent electrical properties for telephone transmission applications. Its weathering resistance is greatly improved by the addition of 2 percent carbon black to the original compound. Polyethylene compounds for conductor insulation are selected for their high molecular weight, since such compounds resist cracking under stress and exposure to certain deleterious substances such as soap.

The polyvinyl chloride compound over the insulated conductors protects the polyethylene insulation and provides a base for coloring the jacket for conductor identification. The compound is applied directly over polyethylene, requiring a type of plasticizer which cannot flow out of the polyvinylchloride jacket to contaminate the polyethylene insulation and change its physical and electrical properties. This compound must also have certain ingredients that improve the weathering properties of the jacket and at the same time not interfere with the satisfactory pigmentation of the covering.

Typical electrical characteristics of the rural distribution wire are indicated as follows:

Conductor Resistance	— 85.2 ohms/loop mile
Mutual Capacitance	— .130 microfarads/mile (wet) — .063 microfarads/mile (dry)
Attenuation	— 1.6 decibels/mile (wet) — 1.1 decibels/mile (dry)
Breakdown Voltage	— 20,000 volts (rms) between conductors and between each conductor and support wire.

Six-pair rural distribution wire weighs 0.115 pound per foot and is obtainable in reels of 2,000 feet or 4,000 feet.

Precautions in Handling Rural Distribution Wire

RURAL DISTRIBUTION wire is not designed to take additional weight at a point. For this reason, no attempt should be made to ride the distribution wire or use a ladder against it. If repair work is required

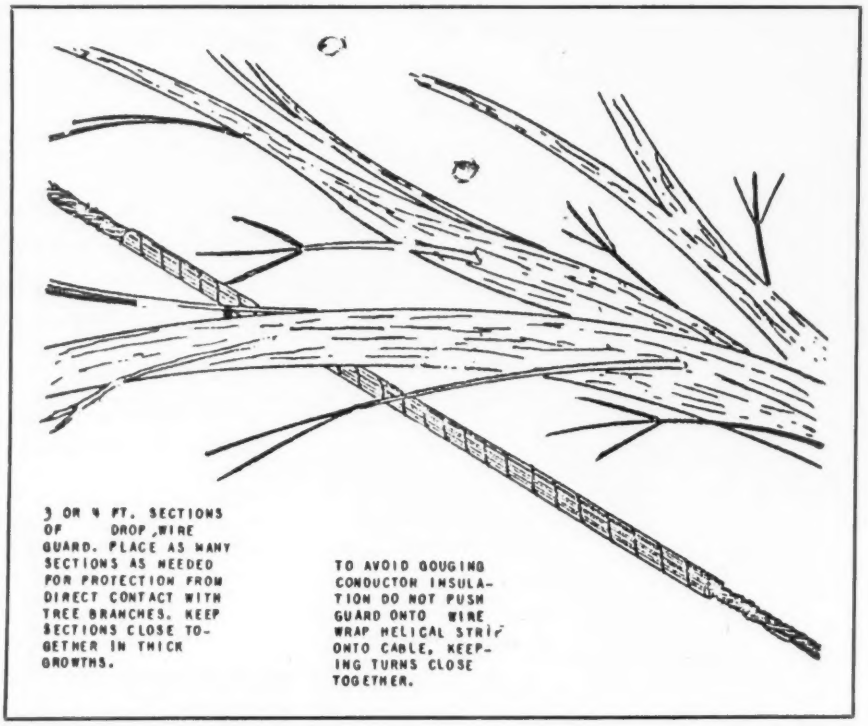
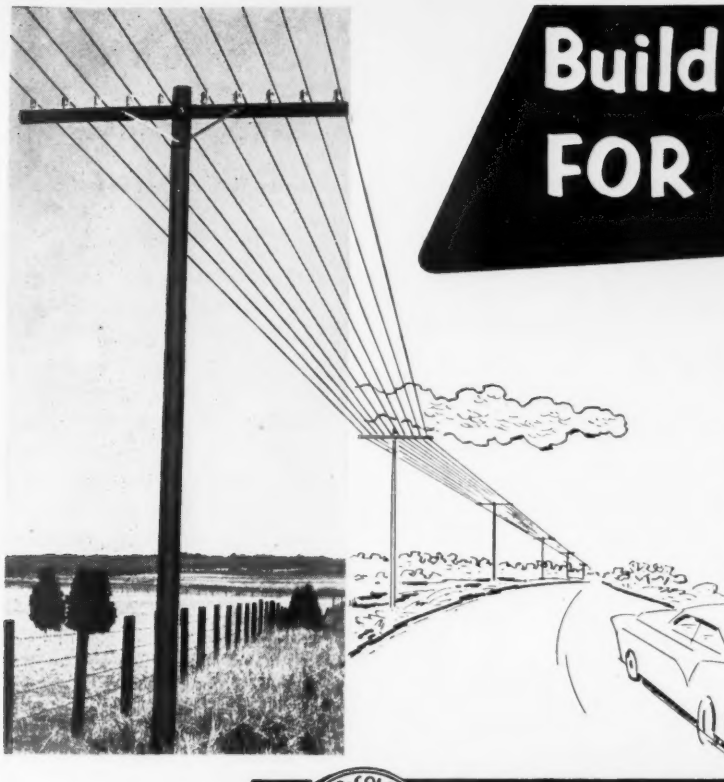

3 OR 4 FT. SECTIONS OF DROP WIRE GUARD. PLACE AS MANY SECTIONS AS NEEDED FOR PROTECTION FROM DIRECT CONTACT WITH TREE BRANCHES. KEEP SECTIONS CLOSE TOGETHER IN THICK GROWTHS.
TO AVOID GOUGING CONDUCTOR INSULATION DO NOT PUSH GUARD ONTO WIRE WRAP HELICAL STRIP ONTO CABLE, KEEPING TURNS CLOSE TOGETHER.

FIG. SEVEN — Method of protecting rural distribution wire from rubbing contact with a tree limb.



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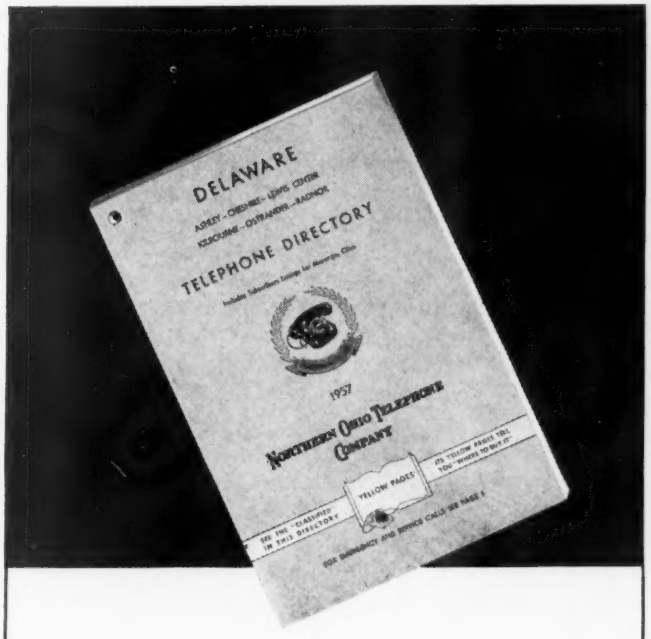

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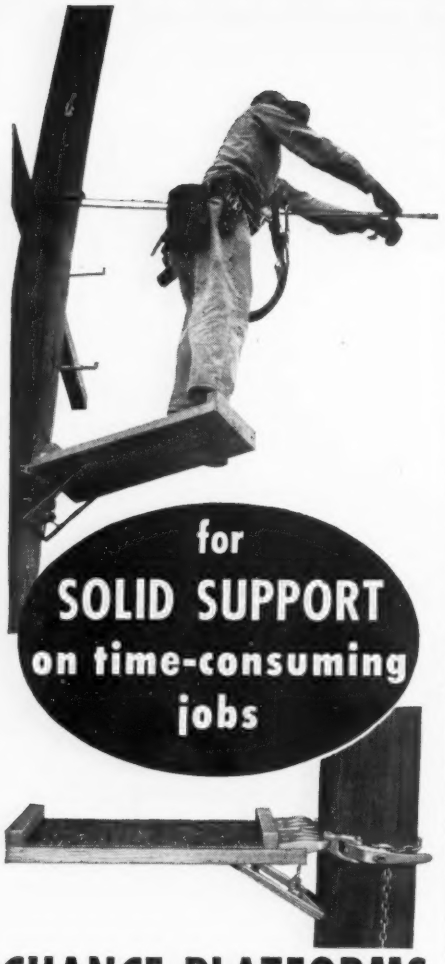

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CENTRALIA, MISSOURI
San Francisco, California

A TELEPHONE ENGINEER OPERATING MANUAL

RURAL DISTRIBUTION WIRE

(Continued from page 66)

in the span, the wire should be lowered to enable work to be done from the ground.

Vehicular traffic should not be allowed to run over rural distribution wire that is being placed. The distribution wire should be suspended temporarily above roads or driveways, or else adequately protected by planks or other means to prevent damage to the distribution wire.

If the polyethylene insulation on the support wire is damaged or has been removed, the damaged or exposed places should be covered with layers of plastic tape applied in the standard manner. It is not necessary to tape the support wire at dead ends and clamp attachments, provided that the conductors are protected by means of a plastic guard and do not contact the bare support wire or clamp.

When rural distribution wire is to be attached to crossarms on poles carrying more than one crossarm, the wire should be hung from the lowest arm, if practicable, to facilitate its installation, and later any needed repair work.

Rural distribution wire passing through trees should be protected from abrasion on tree branches. This generally can be done by trimming the trees around the wire (when permission can be obtained for this work). If the trees cannot be trimmed, the part of wire directly exposed to contact with tree limbs should be protected with wire guards as shown in Figure 7.

In placing rural distribution wire along a power line in joint use or near a power line where voltages may be induced into the conductors and support wires, these conductors and support wire should be connected together to a suitable ground. A satisfactory ground may be obtained by connecting to messenger of sheathed cable, anchor rod of a guy or a ground rod installed for this purpose. This precaution will prevent shock hazard to the workers until the distribution wire conductors can be permanently connected to open wire or cable and the support wire bonded to a good ground, usually the cable messenger or ground conductor of a multi-grounded neutral or both.

Book Review

"Electrical Engineering Circuits," a new textbook by Hugh Hildreth Skilling. Published by John Wiley & Sons. 724 pages. $8.75. Order from Education Division, TE&M, 7720 N. Sheridan Rd., Chicago 26, Ill.

Modern trends in electrical engineering thought, as emphasized by Dr. Skilling, lead to his inclusion of commonly neglected topics. Among the major concepts stressed here are network theorems, loop and node equations of networks, locus curves and other graphical methods, resonance of high-Q circuits, impedance and admittance functions, poles and zeros in the complex frequency plane, the transform concept, and the Laplace transformation. Special attention is also devoted to the algebra of complex quantities, following the line of thought of mathematicians. These topics, though new and somewhat unusual, are nevertheless built into the solid traditional material, augmenting it for practical use.

The chapter headings in "Electrical Engineering Circuits" consist of: six experiments; circuits; complex algebra; average power and effective current; analysis of simple circuits; substitution methods of analysis; resonance; graphical methods; network equations; solution of network equations; network theorems; coupled circuits and transformers; nonlinear elements; Fourier series; the exponential Fourier series and the Fourier integral; transient response and the complex frequency plane; the Laplace transformation; two-terminal-pair networks; electric filters; balanced three-phase circuits; and unbalanced three-phase circuits.

Citizens Utilities Announces Personnel Changes

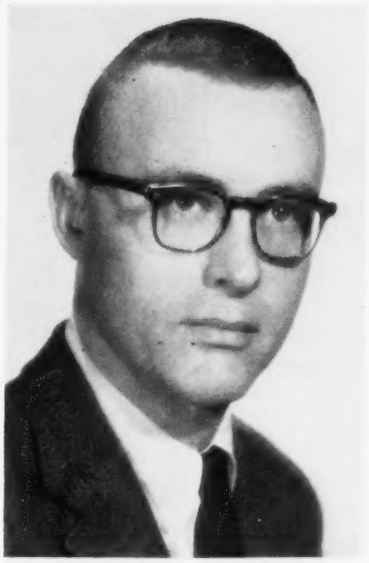
D. H. STEELE, assistant vice president of Citizens Utilities Co., of California, has announced the appointment of A. W. Powell to the post of assistant general manager and Marlin L. Brown as general commercial manager.

Mr. Powell will replace D. L. Oestreicher who has been on temporary assignment from the Citizens Utilities Co., home office in Stamford, Conn. Mr. Oestreicher will return to the Stamford administrative staff of the company.

Mr. Powell has been with the company since February, 1955 and has been Susanville district manager. He was made general commercial manager in October, 1956.

Marlin Brown comes to the Redding post from the Virginia Telephone & Telegraph Co., in Charlottesville, Va., where he was district manager of the company.

A. W. POWELL



D. L. OESTREICHER

M. L. BROWN

The company serves over 200 communities in 7 states and Alaska. In California Citizens Utilities Co., operates the telephone systems in Modoc and Lassen counties and in part of Shasta, Solano and Sacramento counties.

Gilroy Tel. Co. Of Calif. Takes New Expansion Strides

THE GILROY Telephone Company of California is a good example of those Independents who have kept pace with the growing communities they serve by consistent planning for tomorrow's needs.

It became the first Independent company west of the Mississippi to provide its subscribers with nationwide direct distance dialing service, with the cutover to Type "D" SATT equipment, last August 19th. Other companies in the west, however, have had regional direct distance dialing for some time.

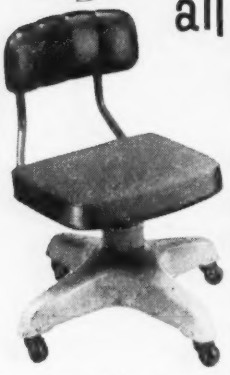
In 1950, the company began to rebuild its plant for conversion to dial operation with painstaking care. In July 1955, it cut into service 1600 lines and 3000 terminals of Type 20 Strowger equipment, with a four-position Type 31 toll board. While their central office equipment was still being manufactured, company officials began planning for direct distance dialing. With the SATT installation, Gilroy became a full toll-center.

The Type "D" system employs a checking operator, who is signalled after the desired number has been dialed into a ticketer by the calling station. The checking operator requests the calling station number, keys it into the ticketer, and signals the automatic sender to complete the call.

Without additional accounting ma-

Sturgis designs a new

all purpose chair



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DON H. STRAHL, manager, Gilroy (Calif.) Tel. Co. inspects tape perforators installed for Type D SATT System.

chinery, the Gilroy company manually sorts and rates machine tickets and those prepared by operators. Microfilm records of the tickets are retained and all original tickets forwarded to subscribers with their monthly statements. The procedure has virtually eliminated questions regarding toll billings.

The Santa Clara Valley community of Gilroy is growing both as an agricultural area and as a commercial hub for North-Central California. The Gilroy Telephone Company, as always, is preparing for tomorrow. An order has already been placed for 400 lines and 600 terminals of additional central office equipment and two positions of toll board.

New Rates Approved For Halstad Tel. Co.

FINDING that the book cost of the Halstad (Minn.) Telephone Company's property at Fisher would increase from $2,500 to $35,000 following conversion of the exchange to dial operation, the Minnesota Railroad & Warehouse Commission approved a new rate schedule for the Fisher exchange.

The new rates will produce a 5.6 per cent return on a rate base of $35,000 and boost net income from $712 to $2,019.

The commission approved the following schedule of rates for the Fisher exchange:

Class of Service	Approved Dial Rates
BUSINESS	
One-party	$11.95
Two-party	10.00
Extension	1.60
Rural Multi-party	5.45
RESIDENCE	
One-party	5.35
Two-party	4.30
Four-party	3.75
Rural Multi-party	4.95
Extension	1.10

Allan W. Ryder Joins Commonwealth Telephone

THE APPOINTMENT of Allan W. Ryder as manager of the Bangor, Pa. District of the Commonwealth Telephone Co. has been reported by Colonel H. H. Butler, Commonwealth vice-president and general manager. Commonwealth Telephone Company operates a 10 district area with over 62,000 stations in a 4597 square mile area in eastern Pennsylvania.

Mr. Ryder was vice-president and general manager for the former Pennsylvania Community Telephone Co. at Bangor when the company was purchased by Commonwealth Telephone in August, 1954. Since October, 1954 to present, he has been general plant superintendent for the Ohio Consolidated Telephone Co.

As district manager at Bangor, Mr.

THE HAMBURGERS ARE WONDERFUL— SO IS PAYSTATION REVENUE

They serve mighty good hamburgers at Azars Drive-In, in Fort Wayne, Indiana. The local telephone company figured this was an ideal spot for an outdoor paystation. Folks at Azars agreed.

It was profitable to both.

Many passers-by who stop to place calls also order hamburgers. And regular Azars customers have shown they like having a paystation nearby. Average *monthly* revenue for a typical six month period was a whopping $107.15!

AUTELCO paystations are proving terrific revenue-producers for a lot of companies. Circular 1877 gives you detailed information on the new "80-series" which offers more user satisfaction than ever. Write: *Automatic Electric Sales Corporation, 1033 W. Van Buren St., Chicago 7. Or call HAymarket 1-4300.*

Our Survey Simplifier will help you pick the best paystation sites. For your copy, just write to the address above.

AUTOMATIC ELECTRIC

A member of the General Telephone System
One of America's great communications systems

GENERAL SYSTEM

Ryder will replace Arthur De Haven, district manager for the last two and one-half years, who is planning to retire from the telephone field after 45 years of active service with the industry. Mr. De Haven spent many of these years with the Bell System and with International Telephone & Telegraph Co.

Mr. Ryder first came to Bangor with the old Blue Mountain Telephone & Telegraph Co. At various times he has been district manager at Elizabethville and later plant superintendent for The Blue Mountain, Southern and Wiconisco Companies, all located in Pennsylvania and now a part of Commonwealth. For two years, he was executive secretary of the New York State Telephone Association, Albany, and was assistant to the president of the Southern Continental Telephone Co., Cookeville, Tenn.

ALLAN W. RYDER

General Tel. Announces Organizational Changes

DONALD C. POWER, president, General Telephone Corp., has announced the following organizational changes at General's headquarters office in New York:

D. E. LeMaster, formerly general commercial manager, General Telephone Co. of Illinois, has been named director of commercial operations for the General System, reporting to Walter G. Wright, vice president — operations.

Richard C. Schneider, former plant extension engineer at the headquarters Operations Department in New York, became training and recruitment supervisor for General Telephone System, a newly-created position in the personnel department, reporting to Marshall K. Taylor, director of personnel.

Alberta Government Considers Rural Telephone Loan Plan

LOANS TO rural telephone companies under the Alberta (Canada) Government's proposed new revolving fund will be repayable at 4½ per cent interest and will be made for a maximum of 10 years.

A bill to set up the Rural Telephones Revolving Fund was introduced in the Legislature recently by Hon. Gordon E. Taylor, minister of highways and telephones. The government plans to put $1,000,000 into the fund this year.

Mr. Taylor said loans will be made from the new fund for the extension and replacement of existing rural telephone facilities, and for the construction of new lines. It will be similar to the Rural Electrification Revolving Fund.

The minister said a pamphlet is being prepared outlining results of experiments involving the use of telephone and power lines on the same poles.

While the act would set the interest rate at 4½ per cent, it also would empower the cabinet to "prescribe such lesser rate or rates of interest as may, from time to time, be deemed necessary or expedient in the interests of rural residents."

It would authorize the provincial treasurer to establish the fund and advance whatever sums of money are required, at the request of the minister of telephones.

However, the amount of advances to the fund and outstanding at any one time would not exceed $10,000,000.

Rural telephone companies would be able to apply for loans to install systems where no telephone facilities exist; to extend existing facilities; to replace or repair facilities, or "to carry out any other project deemed

COMMONWEALTH Telephone Company's new district office, pictured above, was constructed on Pennsylvania Avenue in Bangor and dial switching equipment for the conversion of Bangor to dial next year is on order. Erection of extensive modern cable plant has preceded final work toward that exchange's automation. With completion of the mechanization of the Bangor Exchange in the Fall of 1958 the total cost of improvements within the exchange area will total over $1 million.

by the minister to be a replacement, renewal or extension of the capital works of the company."

The minister would be empowered to recommend a loan when he is satisfied that a company's facilities "will comply with the transmission and construction standards recommended by the Albert Government Telephone System for rural mutual telephone systems . . ."

The minister also would have to be satisfied "that the rates and charges for telephone services are and will maintain an adequate depreciation reserve for the replacement of obsolete works and continued maintenance of its service to Alberta Government Telephone standards."

James H. Kellogg Named Pres., Charles T. Brandt, Inc.

THE BOARD of directors of Charles T. Brandt, Inc., Baltimore, Md., contract manufacturer of steel sheet and metal products, has announced the election of James H. Kellogg as president of the company. Mr. Kellogg succeeds Charles E. Brandt, Sr., who was named chairman of the board.

Mr. Kellogg was formerly president of the Kellogg Switchboard & Supply Co., Chicago, Ill., a division of International Telephone & Telegraph Corp. He has been a member of the board of directors of the Hinsdale, Ill. Community Chest, Inc.; the Armed Forces Communications & Electronics Association, Chicago Chapter; the Illinois State Chamber of Commerce; the E. R. Moore Co., Chicago; the International Standard Electric Corp., New York; and the First National Bank of Hinsdale, Ill.

Phelps Dodge Names Wilson District Manager

RICHARD I. WILSON has been appointed Philadelphia district manager of Phelps Dodge Copper Products Corp. and will be responsible for all sales of the fabricating company in the area.

Wilson formerly was associated with the Philadelphia Electric Co. and the Pennsylvania Railroad Co. He had served as a salesman for Phelps Dodge in the Philadelphia-Baltimore territory since 1935.

He was educated at Drexel Institute of Technology and was a commander in the Navy during World War II.

Northern Ohio Install 100,000th Phone

NORTHERN Ohio Telephone Co. passed a significant milestone recently when the 100,000th telephone was connected to the system. The installation was made in the residence of Mr. and Mrs. J. L. Thompson, who live in the Skyland Allotment at Brunswick, Ohio. The telephone used for the occasion was an ivory handset and the gold plate on it read, "100,000th Telephone Installed by Northern Ohio Telephone Company, March 19, 1957."

Witnessing the installation which was made by Carl Jameyson, senior inspector at Medina, were President and General Manager, Wm. C. Henry; District Plant Manager, J. T. Wilson; and District Commercial Manager, W. D. Hanson.

The installation of the 100,00th telephone came on the eve of the 30th Anniversary of Northern Ohio Telephone Company. The Company began operation April 1, 1927 with 27 exchanges and 23,558 telephones. Since that time the Company has grown to 68 exchanges with more than 100,000 telephones in service. More than 95% of these telephones are dial operated and plans have been completed for the conversion of the remaining telephones to dial service as soon as possible.

Wilson has been a member of the American Institute of Electrical Engineers since 1927 and is on the roster of the Pennsylvania Electric Association and the Union League Club of Philadelphia.

Automatic Electric Plans Record Move

AUTOMATIC ELECTRIC CO. began moving its facilities from Chicago to suburban Northlake, Ill., on May 24th. The moving operation, according to the National Furniture Warehousemen's Association and the Movers' Association of Chicago, will be the largest ever undertaken in the Midwest.

Leslie H. Warner, president of Automatic Electric and chief executive officer of the Manufacturing, Sales and Research Division of the General Telephone System, said the move will be completed in about four months. Mr. Warner emphasized that the move has been planned so that production will not be interrupted.

The new Automatic Electric plant stands on the 167 acre site of a country club. The building, one of the largest industrial structures in the Middle West, will house the General Telephone Laboratories and the general offices and United States pro-

Please turn to page 76

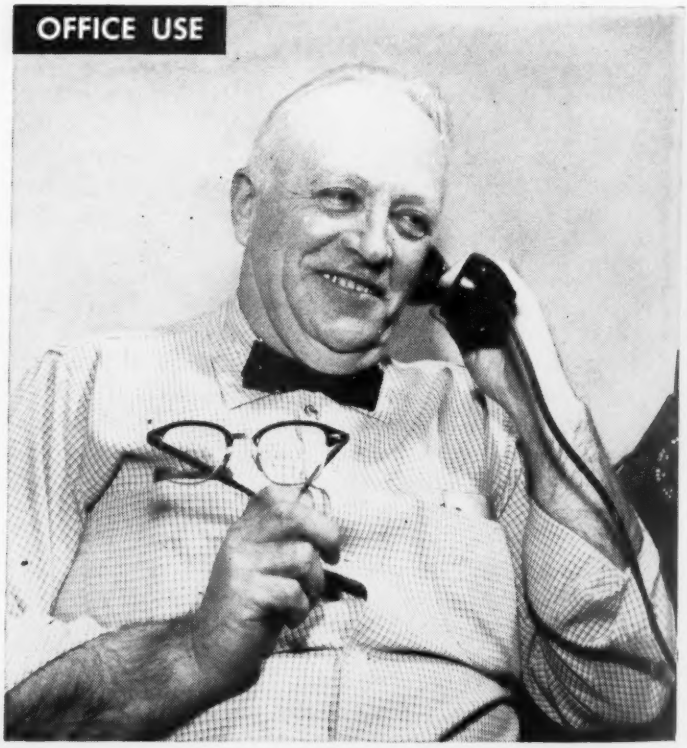
Indiana Telephone Corporation

"We believe in 100 per cent use of pressure-creosoted poles,"

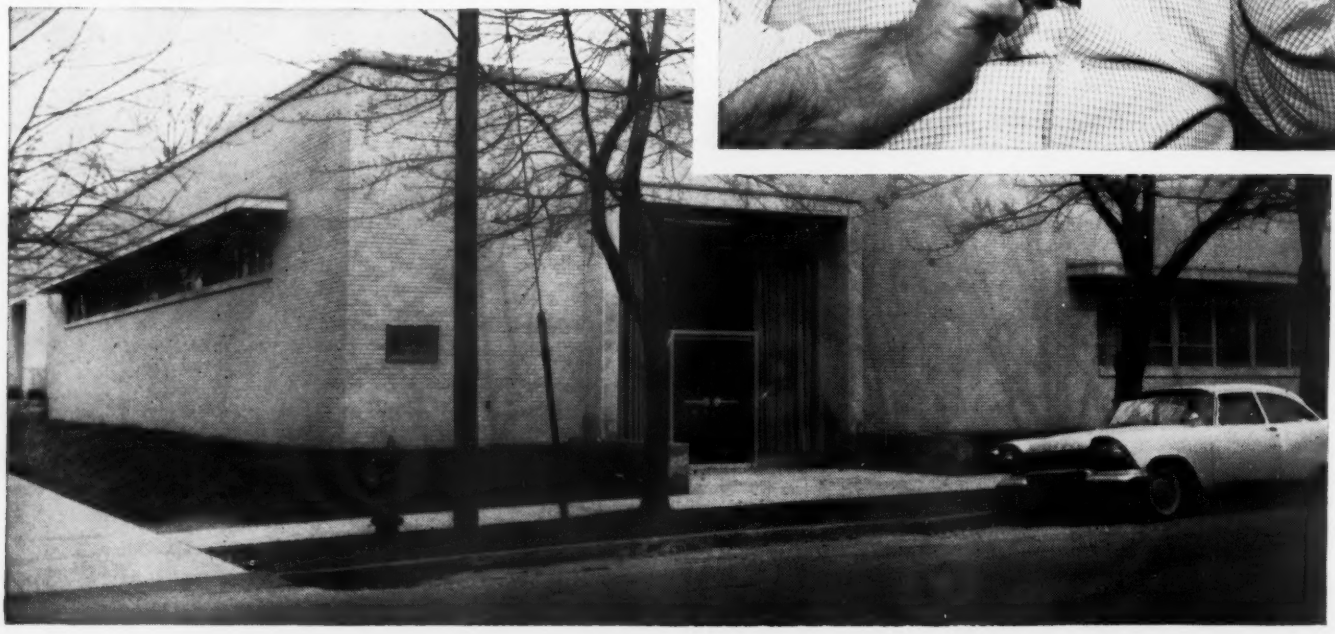
says Lloyd Moren, Engineering Department

The Indiana Telephone Corporation has been using pressure-creosoted poles since 1927, and has 66,000 in service. The only maintenance required is to repair or replace poles damaged by automobiles or storms.

To take care of the area's growth, about 1,500 pressure-creosoted poles are being added each year. The Indiana Telephone Corporation, like so many utilities, believes in 100 per cent use of pressure-creosoted poles.



Headquarters of the Indiana Telephone Corporation, Seymour, Indiana. This new building is the nerve center of a telephone network that serves 35,000 customers in a 15-county area.

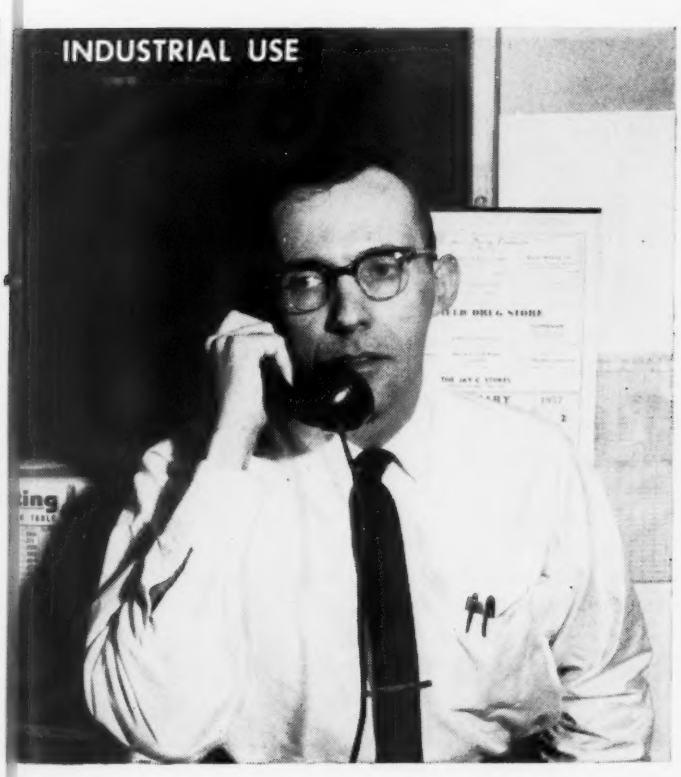


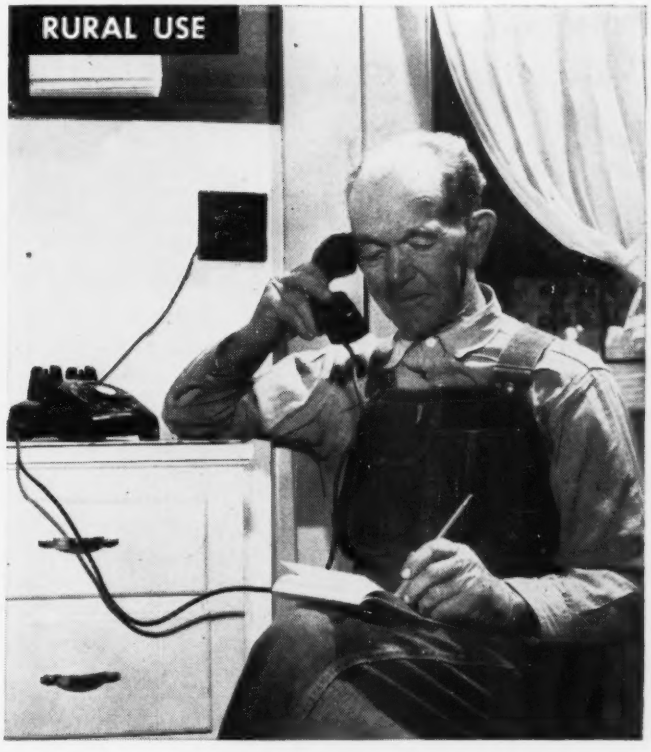
helps develop "The Little Ruhr"

STARTING IN WORLD WAR II, industrial growth along the Ohio River in Ohio, Kentucky and Indiana has been remarkable—so remarkable that the area has been nicknamed "The Little Ruhr," comparing it with the giant industrial Ruhr district in Germany.

Before 1940, this section was predominantly rural. Now, according to Mr. E. S. Welch, Operating Vice President of the Indiana Telephone Corporation, "the rural area which we serve is changing into a city-farm-industry community." Mr. Welch credits the telephone with making much of this growth possible, because it links together even the most remote sections.

The Indiana Telephone Corporation is meeting the demand for stepped-up telephone service. The new Headquarters Building pictured here was completed this year. It controls nearly 1,900 miles of telephone lines that serve 35,000 customers in a 15-county area. The Indiana Telephone Corporation now has 45 exchanges, 26 of which are dial.





If you would like more information on pressure-creosoted utility poles, and the way they can enable you to save money and establish better service for your utility, just get in touch with the nearest Chemical Sales Office of United States Steel or write to United States Steel, 525 William Penn Place, Pittsburgh 30, Pa.

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duction facilities of Automatic Electric. Both organizations are parts of the General Telephone System.

All the athletic stadiums of the Big Ten conference schools would fit on the factory floor of the new plant. It contains more than 1,520,000 square feet of floor space under one roof. Present facilities of the company are spread through 17 multi-story buildings on Chicago's Near West Side.

Joyce Brothers Storage & Van Co., Chicago, estimates that Automatic's office furnishings, stocks and raw materials alone will fill 2000 tractor-trailer moving vans and require 50,000 man-hours just to load and unload.

In addition, Pennoyer Merchants Transfer Company will handle the moving of some 1100 machines, weighing an estimated total of 2,600,000 pounds.

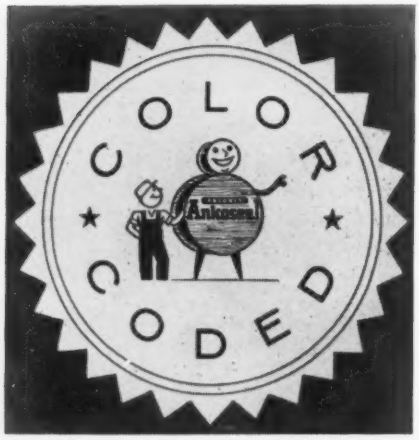
Ansonia Announces Line Of Color Coded Cables

WALTER G. PEARSON, sales director of The Ansonia Wire & Cable Co., Ashton, R. I., has announced production of a complete line of fully color coded telephone cables for the communication industry.

Mr. Pearson stated that all Ansonia Ankoseal Exchange Cables in sizes 6 pr. to 101 pr. in layer construction and in group construction over 101 pr. are now color coded and that at this time the color coded cables would be offered at the same regular prices.

The color coded cables provide all of the performance characteristics of Ansonia Exchange Cables including freedom from cross talk and circuit unbalance. According to Mr. Pearson the color coded cables permit easier splicing in less time than ordinary cables and field reports indicate that substantial savings can be realized in installation and maintenance.

Ansonia will affix a special color coded cable seal to each reel carrying the cables to make shipping identification easier.



ANSONIA ANKOSEAL color coded exchange cables will be identified by this special seal affixed to each reel. The color coded cables are the first to be made generally available from stock to the telephone industry.

SIMAK YAHYA NADIMI (left) of Tehran, Iran, is spending two months in training with The Southwestern States Telephone Co. He is shown receiving explanation on the operation of carrier equipment in the Brownwood, Texas, exchange from CHARLES SHIPP, switchman, kneeling at right, and CHARLES GAMBLIN, division installer, standing. Nadimi is supervisor in charge of operating and maintaining the present carrier telephone system in Iran. He is in the U. S. for a six-months study of general telephone company organization and operation and a special study of carrier equipment. His tour of study is arranged under the Technical Assistance Training Program of the Federal Communications Commission. Aim of the program is to assist in the rehabilitation and expansion of the communication system in Iran and other countries. A large improvement program is planned in Iran.

Marvin A. Byrd Joins U. S. Instrument Corp.

MARVIN A. BYRD, for the past five years general manager of the Mansfield (Ohio) Telephone Co., has been appointed sales manager of the United States Instrument Corp., Charlottesville, Va.

At USI Mr. Byrd will be responsible for all sales of the company's telephone equipment line.

Byrd, 43, entered the telephone industry in 1935 with the Telephone Service Co. of Ohio.

In 1940 he joined the Ohio Bell Telephone Co. in its toll central office equipment department, and remained with that firm until October 1944, when he became associated with the Kellogg Switchboard & Supply Co.

Mr. Byrd was sales manager of Kellogg's eastern division when he left to take over his duties as general

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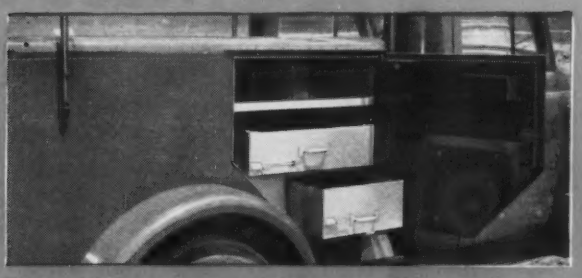

Right side has two material drawers plus space for saws, rubber goods, body belts and climbers with guards.

Step up to this Holan IU-76 and you have a curbside tool room at your disposal. Pull out rear material drawers for screws, insulators, springs, cleats, straps, anchors, inside wire and cords. Slide out a shelf and there's a drop wire reel. And you have a lower left compartment that extends through the body—ideal for long tools, ground rods and stepladder.

Lots of Room Up Front

Up front, on the right, are two more drawers—one for outside wire, P wire and miscellaneous . . . the other for glass insulators, specs and tools. Also, a space is provided for rubber goods, saws, body belts and climbers with guards. Even the spare tire is conveniently stored on a sliding shelf in a clean, dry, left-side compartment. Everything is within reach.

One key locks and unlocks every compartment in a Holan IU-76 . . . and this is the key to better telephone service, lower operating costs. Write us for complete details which include a loading diagram.

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MARVIN A. BYRD joins U. S. Instrument Corp.

manager of the Mansfield Telephone Co.

A native of Bellefontaine, Ohio, Mr. Byrd attended school in Lima, Ohio and night sessions at the Akron University, as well as other specialized training schools.

Leon A. Doughty, Dies

LEON A. DOUGHTY, president of C & D Batteries, Inc., of Conshohocken, Pa., and Attica, Ind., died suddenly May 18 after suffering a heart attack at his home in Glenside, Pa. He was 70 on March 1.

Mr. Doughty, who with Frank S. Carlile, founded the firm "Carlile & Doughty" back in 1906, was active in the company up to the day of his death. Mr. Carlile is company vice-president and treasurer.

Mr. Doughty and Mr. Carlile had been lifelong friends and business associates. They met while both were still students in Philadelphia's Central Manual Training High School studying electricity.

Their first contract, while still students, was for converting the high school from gaslight to electricty, having formed their first 'partnership' with the help of 500 printed business cards, 'Carlile & Doughty, Electrical Contractors.' As teenagers, they wired a number of Philadelphia stores, plants, and apartment houses during the early part of the century.

A pioneer in the electrical field, Mr. Doughty, in partnership with Mr. Carlile, entered the automobile age in its infancy as distributors for electrical components of early cars. The

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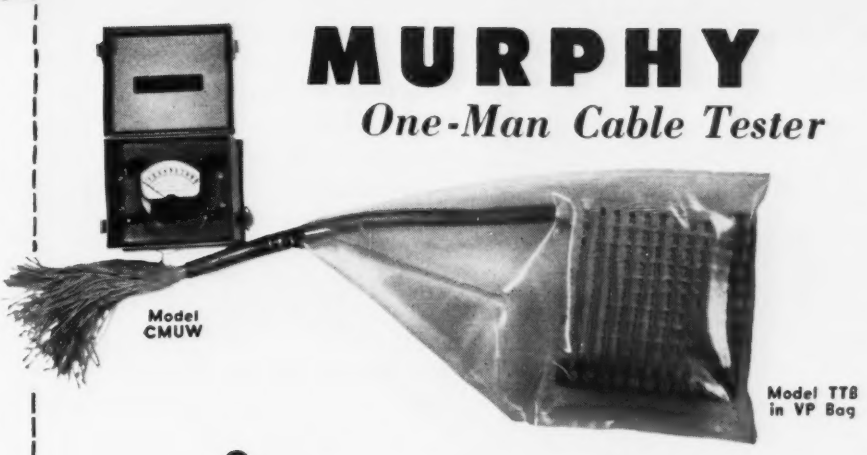

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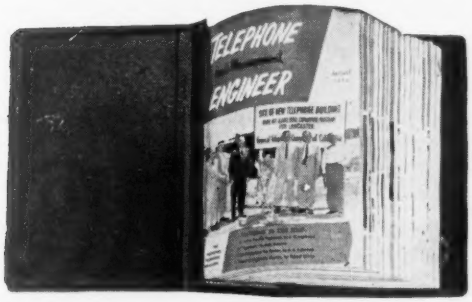

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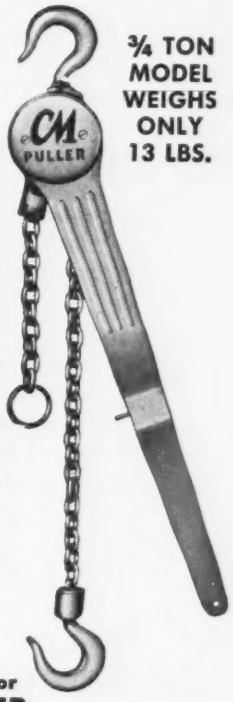

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- Nix on cross-ring
- Underground winner
- 3 ways better

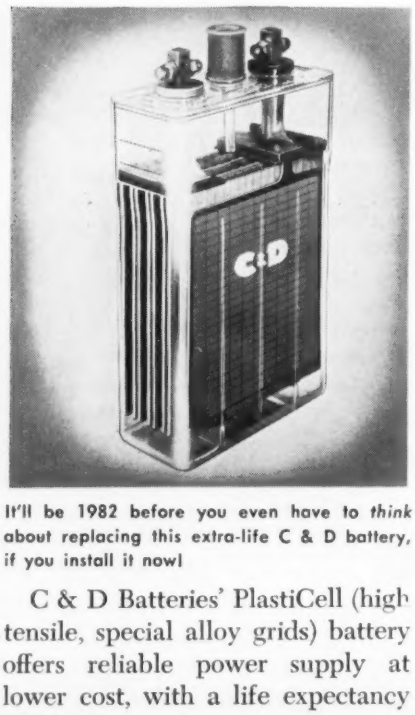
Published regularly to help you get the most out of your materials and supplies dollar

by Ralph W. Pouk, Jr., Office Mgr. and Inside Sales—Chicago

Back when I was a journalism student, I learned the most important news is always—WHO. The same is true in your business. When it comes to ordering supplies, names are the important part of the story. Behind the products you order stand the maker's name—**and** Stromberg-Carlson's name for 62 years of the finest in the field of sound. Together, these names protect you with a double guarantee on performance. They tell you you'll be satisfied with equipment you order. And of course, each order of yours is a boost for the science of telephony—because your supply business plays a major part in helping us continue our research for new and better telephone equipment. We're mighty grateful for your support. We'll do our best to merit your friendship in years to come.

Battery will live 25 years

A quarter of a century is the expectancy of an extra-life battery made by C & D Batteries, Inc. In full-float service, their PlastiCal (lead calcium grids) battery will serve your power needs faithfully —often well beyond its 25-year expectancy.



It'll be 1982 before you even have to *think* about replacing this extra-life C & D battery, if you install it now!

C & D Batteries' PlastiCell (high tensile, special alloy grids) battery offers reliable power supply at lower cost, with a life expectancy of 14 years.

Distribution wire needs no cross arms

There are several reasons you can enjoy lower installing costs with this Whitney Blake multi-pair distribution wire.

Because it's self-supporting, it needs no cross arms. And it's easy to string because it's lightweight and comes in long lengths—up to 4000 feet per reel.

Self-supporting distribution wire has built-in messenger.

This wire has excellent electrical characteristics: low-loss transmission, low capacitance, high dielectric strength.

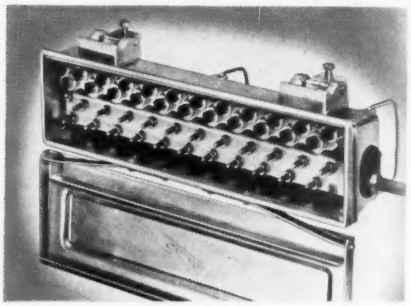
Its polyethylene insulation provides excellent weather resistance.

The wire is available in 3, 6, 11 and 16 pairs. The conductors are of #19 A.W.G. soft copper.

Your Stromberg-Carlson representative will gladly introduce you to the economy of this wire. Call him.

Terminal with New Protector

Now get more dependable protection than ever for station or cable—with Reliable Electric Company's strand mounted terminals.



Precision manufactured terminals of highest quality

These terminals are equipped with the new Reliable Fuseless Protector Unit, which dissipates static discharges across elements to ground.

Another important feature is that the silicon bronze binding posts on which cable stubs are terminated are sealed with the wires in a glass-reinforced polyester resin of exceptionally high dielectric qualities.

Surface leakage is minimized or completely eliminated by 1-1/16" spacing of binding posts.

Noise can be money!

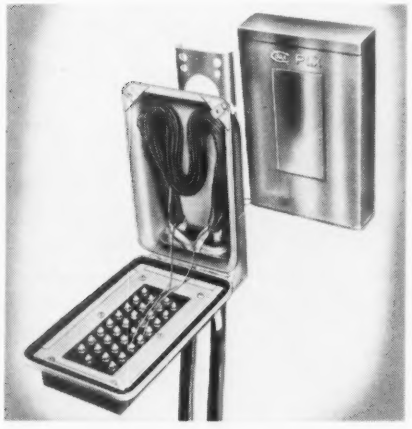
Take a business subscriber who has a telephone in some extremely noisy location—and who has finally decided to do something about it. Would you rather have him spend money in building a soundproofed booth—or give **you** the money as monthly income on a telephone which completely licks the noise problem?

The GAI-PHONE is such an instrument. It has a special transmitter that actually creates a "Zone of Quiet" around the handset—even in a spot as noisy as a boiler factory! It costs the subscriber less than a

booth—and you get the revenue!
Ask us for complete details.

Time and Money Saver

You'll find Cook PLX Cable Terminal the quickest, easiest and most economical to install because there's no stubbing, no splicing, no potting.



Available in 6, 11, 16 and 26 pairs

It's designed for use on plastic cable. You loop the cable through the terminal without cutting wires and terminate the desired pairs for distribution. You can also use the terminal for junctioning and terminating cable.

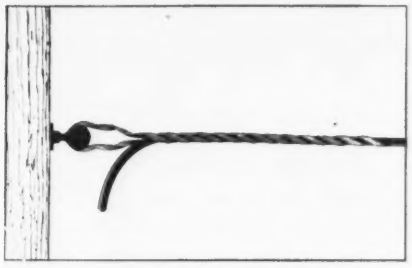
Grommets are furnished to seal the cable entrance. When ordering, specify cable sizes to get the correct grommets.

Heavy galvanized steel frame, deep drawn chamber, welded zinc cover and the famous XB Bakelite face plate with Everdur studs are some of the major features of the Cook Electric Company's PLX Cable Terminal. It can be furnished with or without protection.

Low radial pressure assures positive grip

You get positive gripping action on 2 No. 14 and 2 No. 12 Copperweld and 2-.083 Steel C Rural conductors with Preformed C Rural Dead-Ends.

Low radial pressure over the entire holding area prevents slipping or damage to conductor insulation. The multiple wire loop provides extra strength.



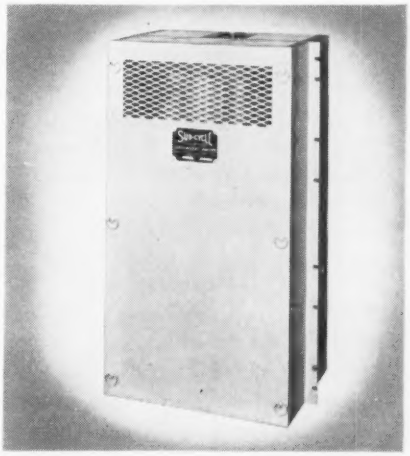
Neoprene coating over stainless steel prevents corrosion or abrasion.

PLP C Rural Dead-Ends are easy to apply by hand—no tools needed. You simply insert one leg through the eye-bolt, then wrap on the legs.

Ask your Stromberg-Carlson representative about Preformed C Rural Dead-Ends.

How to prevent cross-ring in decimonic systems

One good way to avoid cross-ring is to lock your ringing frequencies securely to the 60-cycle supply frequency. This eliminates frequency drift.



K-5 Sub-Cycle is available for 19" rack, as shown, or in other dimensions to fit 23" rack.

You can do this with the Lorain K-5 Sub-Cycle converter for decimonic ringing systems. This machine provides frequencies of 20, 30, 40, 50 and 60 cycles. These frequencies are rigidly locked into a fixed ratio with your 60-cycle input, by the following methods:

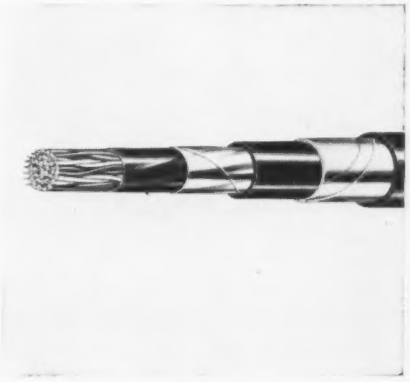
For 60-cycle ringing, a voltage regulator works directly off the input line. For 20 and 30 cycles, self-starting frequency dividers work directly on the input line. For 40 cycles, a frequency doubler is energized by the 20-cycle generator. For 50 cycles, a modulator combines the 20- and 30-cycle frequencies.

Accurate frequency control is just one of several advantages you get. The Lorain K-5 Sub-Cycle has no moving parts, no expendable components—your maintenance costs are nil, once it is installed. Another cost-saving benefit is its very low power requirement.

Ask your Stromberg-Carlson representative about the Lorain K-5 Sub-Cycle.

Cable that can take it

This Ansonia Wire & Cable Company product offers finer electrical characteristics than any other comparable cable.



Available in 24, 22 and 19 gauge, 11 through 404 pair

If you want direct burial cable that stands up under severe ground conditions, order Ansonia Type 775-AP Cable.

Its individually insulated conductors are paired and cabled with a covering of aluminum tape, a plasticized jacket, plus a butt-lapped, stagger-jointed, flat armor tape and a second overall jacket of plasticized polyvinyl chloride.

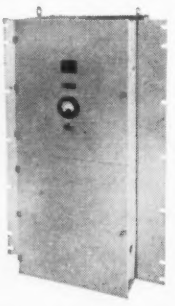
(*Continued on Page* 82)

(*Continued from Page* 81)

construction and maintenance digest

Raytheon Rectichargers® Battery Chargers—Complete Line 3-400 Amperes

Entirely redesigned new Raytheon Rectichargers offer three major improvements:



New Raytheon battery chargers feature ± 1% no-load to full-load regulation

1. ±1% no-load to full-load stabilization prevents battery overcharging, minimizes gassing, lengthens battery life.
2. No audible hum at output terminals.
3. Most compact units on the market—wall or rack mounted.

Automatically compensated for rectifier aging, Rectichargers offer high efficiency, completely automatic regulation. No moving parts and self-protecting circuitry assure minimum maintenance, long life. Single and three phase, 3-400 amps.

Built by Raytheon, supplied to Your Stromberg-Carlson representative can offer prompt delivery on your order.

Did you know . . . that the Stromberg-Carlson general catalog has more than 100 pages of maintenance and construction supplies alone? You can do *all* your business "under one roof" and find the same quality and reliability in every item.

Distributed by

STROMBERG-CARLSON

A DIVISION OF GENERAL DYNAMICS CORPORATION

Sales Offices: Atlanta 6, Chicago 6, Kansas City 8, Rochester 3, San Francisco

company also became one of the first manufacturers of automobile batteries.

With the move to Conshohocken, Pa., in the early twenties, and following the formation of C & D Batteries, Inc., Mr. Doughty and Mr. Carlile decided to specialize in heavy-duty batteries for powering the electric automobile and street trucks in common use during that period. Further expansion into the company's comprehensive scale of heavy-duty industrial batteries was launched in 1944.

LEON A. DOUGHTY

Born in Absecon, N. J., Mr. Doughty had been active for the past 30 years in the American Association of Battery Manufacturers and was treasurer and a director of that group.

Surviving are his widow, the former Marion Kirby; a daughter, Mrs. Virginia Elizabeth Ebner of Collegeville, Pa.; a son, Stewart E. of Creamery, Pa.; and four grandchildren. Stewart Doughty, Quality Control Supervisor for C & D Batteries, was recently elected assistant secretary of the company.

John Jay Hopkins Dies

JOHN JAY HOPKINS, 63, builder of the atomic submarine, the Nautilus, founder and leader of one of the most dynamic phenomena of the American industrial scene, died May 3 at Georgetown University Hospital, Washington, D. C.

Mr. Hopkins was chairman of the board of General Dynamics Corp., which in 1956 achieved for the first time net sales in excess of one billion dollars, and chairman of the board and managing director of Canadair Limited, the corporation's subsidiary in Montreal.

The most notable achievements of Mr. Hopkins and the firm he directed were in the field of nuclear energy. The first, and best-known of the corporation's activities in this area, was the construction of the world's first nuclear-powered means of propulsion, the submarine USS Nautilus, launched at Dynamics' Electric Boat Division, January 21, 1954.

JOHN JAY HOPKINS

Mr. Hopkins was born in Santa Ana, Calif., October 15, 1893, one of five children of the late Rev. John Thomas Hopkins, a Presbyterian minister, and the late May Irene Hymer Hopkins. He graduated from high school at Fullerton, Calif., and attended Occidental College in Los Angeles from 1911 to 1914. He was president of his freshman class, participated in Football, basketball, track, tennis and debating. He transferred to the University of California at Berkeley and graduated in 1915 with an AB degree.

Following graduation, he spent the next year, 1915-16, in the petroleum business in the offices and refineries of the Standard Oil Company of California.

He entered Harvard Law School in 1916 but interrupted his education in 1917 to enroll as Seaman, Second Class, in the United States Naval Reserve at the San Pedro, Calif., Officers Training School, from which he graduated as Ensign.

On June 26, 1917, Mr. Hopkins married Ruth Smith, daughter of the late Quincy Ralph Smith and Emma

Birch Smith of Santa Ana, Calif.

Mr. Hopkins resumed his education in 1919 when he returned to Harvard Law School. He received his LL.B degree there in 1921.

Following his graduation from Law School, Mr. Hopkins joined the New York City law offices of Cravath, Henderson, Leffingwell and De Gersdorff (now Cravath, Swaine & Moore), where he remained until the end of 1924. He then practiced under his own name from 1925 to 1932 in New York City and Los Angeles, Calif.

In 1932 and 1933 Mr. Hopkins was Special Assistant to the Secretary of the Treasury of the United States and from 1933 to 1936 he was general counsel and a director of Mayflower Associates, Inc., New York City.

Mr. Hopkins maintained a law and business office in New York City from 1936 to 1941. He was active in oil producing and agriculture in California throughout the period of 1919 to 1942 before he became a vice president of Electric Boat Co.

In addition to his industrial activities, Mr. Hopkins took an active personal interest in the application of nuclear energy to peaceful means. In 1956 he enunciated a plan for the development of a united atomic treaty organization of free world nations, UNATOM.

During the last three years he also proposed three interrelated plans directed toward the development of a "World Energy Community" for the international harnessing of atomic energy. Mr. Hopkins' goal was the advancement of world peace and prosperity by the elevation of living standards of all nations through the international development of nuclear power. He was the author of a number of articles on this subject.

Surviving are his widow, Mrs. Ruth Smith Hopkins, a daughter, Mrs. Clement Conger, of Alexandria, Va., two grandsons, William Ramsay Conger and Jay Alden Conger, and a granddaughter, Shelley Louis Conger. Mr. Conger is an Assistant Chief of Protocol in the State Department.

Preformed Line Announces Recent Personnel Changes

THOS. F. PETERSON, president of the Preformed Line Products Co., Cleveland 3, Ohio, has announced the following personnel appointments: (1) R. F. Hollitz, named assistant general manager of sales — headquarters staff functions; (2) F. L. Irvin, assistant general manager of sales — representative-jobber functions; (3) J. W. Ramey, manager of operations — Palo Alto, Calif. plant; (4) R. A. Bell, district manager of sales — Cleveland District; (5) E. H. Brown, district manager of sales — Eastern Area; (6) D. B. Evans, district manager of sales — West Coast.

Mr. Hollitz joined Preformed Line Products Co. in 1954 as manager-production control and director of purchases. Previously, he was with the Central Specialties Division, King-Seeley Corp. as director of purchases in 1949, and in 1953 was a metal specification analyst for the Ford Motor Co.

In addition to supervising the administrative aspects of the sales department, Mr. Hollitz will also coordinate the company's foreign licensing program.

Mr. Irvin is a graduate of Denison University, receiving a B. A. degree in 1942. Mr. Irvin spent the

Play your cards straight and make an investment in wood, properly creosoted by REPUBLIC. The record of long service-life (up to 70 years in some cases) proves the benefit of using pressure-creosoted wood. Republic Creosoted Products resist decay in all climates (in acid or alkaline soils) and attack by insects and fungi. This makes REPUBLIC CREOSOTED WOOD a must to economy-minded buyers.

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REPUBLIC CREOSOTING COMPANY

MERCHANTS BANK BUILDING · INDIANAPOLIS 4, INDIANA

R. F. HOLLITZ

F. L. IRVIN

war years in U.S.N.R. as skipper of a sub-chaser with the rank of full Lieutenant. He has been with Preformed Line Products Co. since 1948, having started in the sales department and working his way up to the position of Western Area sales supervisor in 1956. Mr. Irvin's duties will concern the administration of company policies with respect to sales representatives-jobbers and distributors.

Mr. Ramey has been associated with Preformed Line Products Co. since the inception of its plants at Palo Alto, Calif., in 1954. He held the position of production manager at that time. In his new capacity he will be in charge of the operation of the Palo Alto plant.

Mr. Brown has had over 15 years experience in various sales and purchasing positions. He was formerly sales manager of the Frank M. Whiting Co., and general sales manager of the Wilcox Crittenden & Co., Inc., and purchasing agent of the Young Corp. Mr. Brown joined Preformed Line Products Co., in October 1956 as Eastern Regional Sales Supervisor with headquarters at Haddam, Conn. As District Manager of Sales — Eastern Area, his office will continue coverage of the 12 eastern states.

Mr. Bell was with the Reynolds Metals Co. from 1951 to 1956, starting as a sales trainee and later advancing to industrial sales representative. He joined Preformed Line in May of 1956 to organize the Cleveland District sales operations. The Cleveland office covers all or portions of the following states: Ohio, Kentucky, Tennessee and West Virginia.

Mr. Evans came to Preformed Line in 1955 as manager of the Palo Alto, California, plant. From 1952 to 1955 he was a salesman for the K. M. Ryals Co., San Francisco. The West Coast District Sales Office has been assigned the states of Washington, Oregon, Western Montana, Idaho, California, Arizona, Utah and Nevada.

J. W. RAMEY

Kellogg Veterans Hold 13th Annual Banquet

HOLDING their 13th annual banquet of the Veteran Employes' Club, Kellogg Switchboard & Supply Co., Chicago, last month participated in the presentation of 82 awards to employes with length of service ranging from 15 to 45 years.

Among the Kellogg veterans receiving service awards was: Frank Vancura, who received an engraved watch in recognition of his 45 years of continuous employment with Kellogg. Those receiving 40-year awards were: William J. Lindstrom; Anton W. Kuciver; Albert G. Erdmann; Philip Vetter; Mae Schultz; John J. Andry; August Fiala; and William H. Christopher.

STERLING BASS (left), comptroller and treasurer, Kellogg Swbd. & Supply Co., presents engraved watch to FRANK VANCURA in recognition of his 45 years of service with Kellogg.

Reserve Advertising Space Now!

FALL Construction and Maintenance Issue

Telephone Engineer & Management

September 15, 1957

Probably the most valuable sales aid of the year for manufacturers and firms selling telephone equipment, supplies and services to the $17 Billion telephone industry. Special editorial features on new methods of construction, new wrinkles in maintenance plus many new products being introduced for the first time will cause this issue to be saved and referred to time and again. Plan your advertising to take full advantage of this important number.

ADVERTISING FORMS CLOSE SEPT. 1

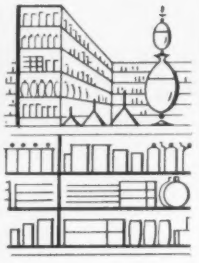
The 1957 FALL CONSTRUCTION ISSUE

SEPT. 15, 1957 FORMS CLOSE SEPT. 1

TELEPHONE ENGINEER
Publishing Corporation

7720 Sheridan Road, Chicago 26, Illinois - Phone ROgers Park 4-3040

BEST... FOR DRUG STORES



the B-N Booth

attracts revenue with its colorful, clean appearance... retains profits with sturdy maintenance-free construction.

Consult your distributor or write direct for folder... Benner-Nawman, Inc., 3421 Hollis Street, Oakland 8, California.

a B-N booth is a busy booth!

A Zoologist Writes: "Every imaginable remedy tried for protection against ticks and chiggers; only Ticks-Off passed the acid test."

STOP INSECT BITES!
PREVENT DISEASE & INFECTION!

TICKS-OFF

More Than A Repellent

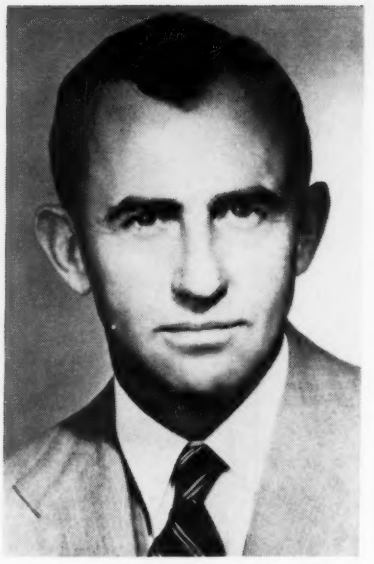
SAFE! FAST! Keeps away Chiggers, Ticks, Mosquitoes, Flies. A few second spray protects you all day!

12 Oz. Bombs

Do you know that biting ticks transmit to humans twice the number of tularemia cases than handling or skinning of rabbits.

Distributed by
MINE SAFETY APPLIANCES CO.
201 North Braddock Avenue
Pittsburgh 8, Pa.
76 Branch Offices in the United States

MARVIN CHENAULT



FRANK PACE, JR.

Marvin Chenault Joins Superior Cable Corp.

MARVIN CHENAULT, JR. has joined Superior Cable Corp., Hickory, N. C., as sales engineer. His headquarters will be at Dallas, Texas, and he will cover the Texas, Oklahoma and Louisiana territory.

Mr. Chenault has been associated with the cable industry in various capacities for the past 10 years. Most recently, he was employed by The Brenner Sales Corp. as a sales representative.

A native Texan, he was born in Wichita Falls in 1923. After graduation from Highland Park High School in Dallas, he continued his education at Southern Methodist University where he majored in Engineering.

A veteran of both World War II and the war in Korea, Mr. Chenault served with the U. S. Air Force.

Frank Pace, Jr. Elected Pres., General Dynamics Corp.

DIRECTORS of General Dynamics Corp. announced last month that Frank Pace, Jr. had been elected president of the corporation and reelected vice chairman of the board.

Pace joined the corporation as executive vice president in 1953 and was in 1955 elected vice chairman of the board. A graduate of Princeton University and Harvard Law School, Pace has had a distinguished public career, serving as Secretary of the Army and Director of the Budget.

The directors also elected Earl Dallam Johnson, executive vice president. Johnson, a former Under-Secretary of the Army and recently president of the Air Transport Association, was formerly vice president of Loomis, Sayles & Co., Boston. He joined Dynamics in 1955 as senior vice president-operations and fiscal affairs.

Pace is a native of Little Rock, Ark., and a graduate of Princeton University (1933) and Harvard Law School (1936). He served as an assistant district attorney in Arkansas and then as general counsel for the state Department of Revenue until he became a member of a Little Rock law firm in 1941. During World War II he was with the Army Air Corps, leaving with the rank of Major at the war's end.

Following the war, he became special assistant to the Attorney General of the United States in the Taxation Division of the Department of Justice and then for two years Executive Assistant to the Postmaster General.

In 1948 he was appointed assistant director of the Bureau of the Budget and in 1949 he was named director of the Budget.

He served as secretary of the army from April, 1950 through January, 1953, during which time he was responsible for the Army's rapid expansion to meet the emergency in Korea.

A native of Hamilton, Ohio, Johnson is a graduate of the University of Wisconsin. Following a year of service in the Army Air Corps, in 1933 he joined Loomis, Sayles and Company of Boston, economic consultants and investment counselors. He remained with that organization until 1942, when he reported for active duty with the Air Transport Command. He left with the rank of Colon-

el in 1946, returning to Loomis, Sayles, where he remained until he entered government service in 1950 as Assistant Secretary of the Army for manpower and reserve forces.

He became under secretary of the Army in 1952 and held that post until February, 1954, when he left to become president of the Air Transport Association of America. He joined General Dynamics a year later.

Stromberg-Carlson Names Huddleston to Sales Post

THE APPOINTMENT of William R. Huddleston as telephone sales representative has been announced by T. C. Thompson, general sales manager for the Telecommunication Division of Stromberg-Carlson, a division of General Dynamics Corp.

Mr. Huddleston will serve operating companies in Nebraska, Wyoming, Colorado and the northern

W. R. HUDDLESTON

half of Kansas, replacing Robert B. Leary, who, after several years in the territory, is returning to Rochester, N. Y.

A native of Lincoln, Neb., Mr. Huddleston started with the Lincoln Telephone & Telegraph Co. 15 years ago as a groundman. He then became a cable splicer, and later progressed to commercial representative with the company. Subsequently he served as development supervisor before joining Stromberg-Carlson.

Mr. Huddleston graduated from College View High School and later attended the University of Nebraska before entering the Marine Corps in 1942. He served until 1946 as a front line communications man.

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Save Money and Time!
TOLL TICKETS 1-LOUT on Bond Paper ONLY 40¢ THOUSAND (MIN. 20,000)
TELEPHONE PRINTING SPECIALISTS FOR 49 YEARS
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What You Want When You Want It
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By People Who Know the Telephone Business.
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SUTTLE EQUIPMENT CO.
LAWRENCEVILLE ILLINOIS

INSPECTION SERVICE
"AT TIMBER TREATING PLANTS."
Of poles, crossarms, and preservative treatments. Analysis of wood preserving. Consulting and specifications writing.
A. W. WILLIAMS INSPECTION CO., INC.
MOBILE, ALABAMA
Inspectors stationed throughout the U.S.A.

Davis UTILITY PLANT CONSTRUCTION *Construction Co.*
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CONSULTING ENGINEERS
Suite 1344 120 South La Salle Street CHICAGO
Appraisals—Original Cost Studies
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Construction Crews Station Installers
Central Office Installations
Cable Splicers Complete Engineering
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Norwalk, Ohio - Tel. 3-0231
Lansing, Mich. - Tel. IV-5-7642
Pekin, Il. - Tel. 6-6336
Erie, Pa. - Tel. 2-4300
Sumter, S. C.
PERFORMANCE Has Built Our Business

CARL C. CRANE, INC.
Consulting Engineers
2702 Monroe Street, Madison 5, Wis.
Telephone CEDAR 3-4210

TUDOR AND YAGER, INC.
TELEPHONE CONSTRUCTION
TIPTON, INDIANA
Phone OSborne 5-2267

JAY G. MITCHELL
CONSULTING ENGINEER
APPRAISALS—COSTS—PLANT
7720 SHERIDAN ROAD CHICAGO
FOR MAIL BOX 523 EVANSTON, ILLINOIS

BUYERS' GUIDE

ADVERTISING. Directories — *General Telephone Directory Co., 1800 Busse Highway, Des Plaines, Ill.*—[ADV. 1]

BELTS — CLIMBERS — COMPLETE LINEMEN'S EQUIPMENT, *W. M. Bashlin Co., Bashlin Bldg., Grove City 1, Pa.*—[ADV. 2]

BOOTHS—Acoustic Telephones — *Sherron Metallic Corp., 1202 Flushing Ave., Brooklyn 6, N. Y.*—[ADV. 3]

BORING MACHINES, EARTH — *Highway Trailer Co., Edgerton, Wis.*—[ADV. 4]

CORDS, Switchboard (with or without plugs), Instrument (retractable and regular) and Operators — *Commercial Cord & Supply Co., Inc., 26 Main St., Clifton Springs, N. Y.*—[ADV. 5]

CORDS, Switchboard & Telephone — *Runzel Cord & Wire Co., 4727-31 Montrose Ave., Chicago 41, Ill.*—[ADV. 6]

PIPE PUSHERS — *Giant Manufacturing Co., South 6th St., at 12th Ave., Council Bluffs, Iowa.*—[ADV. 7]

POLES, Southern Yellow Pine — *Taylor Colquitt Company, 217 E. Main St., Spartanburgh, S. C.*—[ADV. 8]

POLES, Southern Yellow Pine — *Texas Creosoting Co., Orange, Texas.*—[ADV. 9]

PROTECTIVE EQUIPMENT — *Reliable Electric Company, 3145 Carroll Avenue, Chicago 12, Ill.*—[ADV. 10]—

REBUILT TELEPHONES & SWITCHBOARDS — *Telephone Repair & Supply Company, 1760 Lunt Avenue, Chicago 26, Ill.*—[ADV. 11]

WIRE, Insulated — DATED DROP WIRE — Neoprene or Weatherproof — *Alphaduct Wire & Cable Co., New Brunswick, N. J.*—[ADV. 12]

WIRE, Insulated Drop and Bronze of Copperweld — *Acorn Insulated Wire Co., Inc., 36 Freeman St., Pawtucket, R. I.*—[ADV. 13]

A TE&M Service Department

NEW PRODUCTS

Digger Attachments

THREE POWER FEED attachments for Holan diggers are now being manufactured by J. H. Holan Corp., 4100 West 150th Street, Dept. TE&M, Cleveland 11, Ohio.

The new attachments use the weight and hydraulic power of the derricks to feed diggers into the ground. The downward force, created entirely by the live-boom derricks, makes it easy to dig into hard ground and there is no need for a man to guide the diggers.

The Series 4407 Power Feed Linkage (*illustrated below*) and the Series 4411 Rigid Bracket-Type Power Feed were designed for Holan's Series 3700 Derrick, and the Series 4412 Bracket-Type Power Feed for the Holan Series 5700 Derrick. The linkage is attached to the side legs, whereas the bracket types are located on the middle leg.

Though the derrick travels in an arc, the linkage provides for a straight vertical force on the digger. The result is straight holes. The linkage is mounted off center to permit digging close to obstructions. A torque arm is provided because of the built-in swivel.

The two bracket types make it possible to get under low lines easier because the digger is closer to the derrick. The 4411 has a torque arm for the built-in swivel. An optional torque arm can be provided for applications where the digger is detached from the 4412 bracket.

All Holan derricks, diggers and power feeds stow overhead. Diggers with power feed need not be removed for pole-handling.—For complete data, *Check New Product* 158.

Drafting Table

NEW EFFICIENCY-engineered drafting tables that give the draftsman sufficient space for working, storing drawings and filing correspondence and blueprints in a single, compact unit are now available from Republic Steel Corp.

The tables were originally designed by Republic Steel draftsmen for their own use in the manufacturer's engineering departments. Overall size is 106″ long and 36″ deep. The desk provides working space on its adjustable-angle drawing board, 60″ wide and 36″ deep, and on the attached reference table with a top 48″ wide by 33″ deep. Full-size drawings can be stored conveniently in a flat 37″ x 27″ x 2″ drawer under the reference table top.

The base of the drawing table provides filing space in a box drawer

Holan Series 4407 power feed linkage.

New drafting table, originally designed by Republic Steel draftsmen for their own use, is now available from the steel company's Berger Division. Drafting table and attached reference table provide ample space for working, storing drawings and filing correspondence and blueprints.

and two standard size filing cabinet drawers. The draftsman still has leg room and a foot rest under the 36" high drawing board.

The drawing board is natural finish, dressed white pine, protected during shipping with a light coating of shellac. All other parts of the unit are gray-enameled steel, sturdily assembled with steel bolt construction.

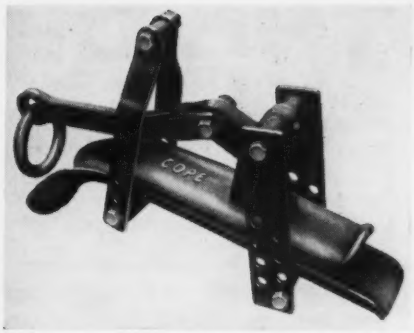
The complete unit is shipped knocked-down in four crates from Republic Steel Corporation, Berger Division.—For complete data, *Check New Product* 159.

Guy Protector

AN ALUMINUM alloy guy protector has been developed by Hubbard & Co. as an addition to its line of aluminum pole-line hardware. It is intended particularly for use in areas where the action of industrial gases or seacoast atmosphere causes abnormal corrosion of steel. Hubbard & Co. also makes guy protectors in Corten steel and in light and heavy galvanized steel.

The new protector comes in two sizes, No. AL-27, 7 feet long, and No. AL-28, 8 feet long. The protector is made in a half-round design, with the edges turned in lengthwise for added rigidity, giving it high strength in spite of its light weight which is only about half that of the galvanized type.

Attachment holes are spaced so they have universal application to the guy wire. Top attachment is by means of a clip arrangement. The bottom bolt is 2½ inches long, permitting attachment to be made over the rod or the strand between the eye and the clamp. Installation can be made on the clamp by substituting the protector bolt for one clamp bolt.—For complete data, *Check New Product* 161.



NEW CABLE PULLING RIGGING for salvaging underground cables has been announced by T. J. Cope, Inc. The heavy duty puller will handle 2½" and 3" cables. It applies a strong, positive grip that can readily be released by slackening the winch line. In this fashion the cable is readily withdrawn from the conduit. *Check NP 160.*

Dial Bank Cleaning Brush

P. K. NEUSES, INC., has announced the availability of a new dial bank cleaning brush for brushing dust and other accumulations from the terminal levels of selector and connector banks in step-by-step dial telephone systems. The unit features a dielectric fibre handle and best grade nylon bristles. Size is 2⅜" x 6". For complete details, *Check New Product* 162.

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Published in each issue of Telephone Engineer & Management. Advertising forms close on 1st & 15th of month. Rates 15 cents a word except for Situation Wanted ads, which are only 10 cents per word. In figuring cost of ads, count each word of address in number of words used. All ads payable in advance. Minimum charge—$2.00. Special rates for display ads on request. Send copy and box number replies to Telephone Engineer Publishing Corp., 7720 N. Sheridan Road, Chicago 26, Ill.

HELP WANTED

PLANT ENGINEERS — For large Independent Telephone Company. Some experience necessary. In reply state age, educational and employment history. Address reply to Personnel Supervisor, Rochester Telephone Corporation, 10 Franklin Street, Rochester 4, New York.

MICROWAVE CARRIER MAINTENANCE

Interesting position available to man with initiative. Experience with radio, carrier and automatic telephone switching essential. Second class radio license desired. Telephone company located in a fast growing Florida city. Write Box No. 1080, Tallahassee, Florida.

CABLE SPLICERS, Station Installers. Equipment Installers, Linemen. Experienced men needed. Steady work, good pay. **Henkels & McCoy, 1211 Kenmore Avenue, Elkhart, Indiana, or 6100 N. 20th St., Philadelphia, Pa.**

WANTED: Men capable of retaining extraordinary positions with one of the industry's most progressive manufacturers. Liberal salaries plus benefits. Outstanding working conditions in new buildings. Associate with engineers known for notable contributions and achievements in the field of telephony.

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EXPERIENCED INSTALLERS. Installation experience or equivalent in testing or maintenance. Travel allowance plus expenses.

PROJECT ENGINEERS. Capable of directing crossbar projects. Act as coordinator of engineering, manufacturing and installation, plus customer contact. Strong telephony background essential with emphasis on circuits and equipment.

POWER EQUIPMENT DESIGNER. Design power equipment for automatic switchboards. Must have ability to design circuits as well as panels and cabinets.

For these and other rewarding careers "with a future" write to Personnel Department, Room 102, NORTH ELECTRIC COMPANY, GALION, OHIO

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Desire telephone company of 400 or more stations. Send details to Box 9068, Telephone Engineer Publishing Corp., 7720 N. Sheridan Road, Chicago 26, Illinois.

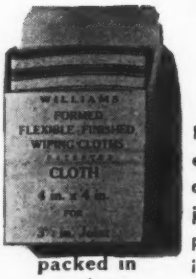
HELP WANTED

ASSISTANT ACCOUNTANT-OFFICE MANAGER: Graduate accountant or one experienced preferably in utility accounting to supervise and direct the work of other employes, prepare operating and statistical reports, tax returns, etc. Good opportunity with rapidly expanding progressive company. Excellent employe benefits. Iowa-Illinois Telephone Company, New London, Iowa.

FOR SALE

WESTERN ELECTRIC NO. 392 LOUD BELLS
Refinished and tested, with condenser — $6.00 each.
Telephone Equipment, Inc., Montrose, Mich.

FOR SALE: Arcola Telephone Exchange. Has Stromberg-Carlson Switchboard. Price $1500. Write Mrs. Lizzie Ott, Arcola, Mo., Phone 28.



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WANTED

Assistant to President and General Manager of Independent system with 10 exchanges. Converting entire system to dial about January 1, 1957, with about 5,700 stations. Person selected must be an experienced, Independent telephone man capable of directing Traffic, Plant, Commercial and Accounting activities. Starting salary $8,000-$10,000 range. If you are interested, apply before June 15, 1957 by letter only, giving complete details on age, education, experience, position's held and salary. Applicants selected for personal interview will be notified by July 1, 1957. Write

Eastern Illinois Telephone Co.

Rantoul, Illinois

FOR SALE

FOR SALE: Stromberg-Carlson, Type 3 toll switchboard, 24 single positions, with 2 panel sections, cord circuits B-34630, to be superseded with direct distance dialing at Medina, Ohio toll center.

Northern Ohio Telephone Company
Bellevue, Ohio

SPECIFY TELERING for

Dependable and Economical Telephone Ringing Power Equipment.

Engineered for complete satisfaction.

Manufactured by
TELKOR, INC. Elyria, Ohio

USE TELEPHONE ENGINEER AND MANAGEMENT'S CLEARING HOUSE
To locate workers—jobs—merchandise.
A small ad covers the field.

MRS. JEAN S. AUGUSTINE, president of the telephone companies at Lexington, Va. and Pell City, Alabama, may now take off her jeans and don a beautiful dress following our *blooper* on a story carried in a recent issue. Inadvertently *Mrs. Jean* was called a *Mr.* in our story and she has notes from many of her friends to prove it. A beautiful dark haired brunette as a boss lady is more in place and much more correct. *Shades of Hoobert Heever!*

Minnesota Commission OK's New Twin Valley Rates

FINDING that present rates will be unreasonable after the company completes its $564,000 dial conversion program, the Minnesota Railroad & Warehouse Commission approved a new schedule of rates for exchanges operated by the Twin Valley-Ulen Telephone Co., at Gary, Twin Valley, Flom, Ulen, and Waubun.

Class of Service	A (Ulen) 0-500 Stations	B (Twin Valley, Gary & Flom) 501-1000 Stations	C (Waubun) 1001-1500 Stations
BUSINESS			
One-party	$6.50	$7.50	$8.50
Two-party	5.75	6.75	7.75
Five-party (Flom only)	....	6.75	7.75
Rural Multi-party	5.00	6.00	7.00
Extension	1.50	1.50	1.50
RESIDENCE			
One-party	5.00	5.50	6.00
Two-Party (Ulen only)	4.50	....	....
Four-party	3.75	4.25	4.75
Five-party (Flom only)	....	4.25	4.75
Rural Multi-party	4.25	4.75	5.25
Extension	1.00	1.00	1.00
MISCELLANEOUS			
Service Switching Station	....	1.50	1.50
Minimum Charge, per circuit ,per mo. for service switching	....	7.50	7.50
Joint User, Business	2.75	2.75	3.50
Excess mileage charge for serv. beyond the local base rate area, each one eighth mile or fraction thereof:			
One-party	.30	.30	.30
Two-party, each subscriber	.20	.20	.20
Four-party, each subscriber	.15	.15.	.15

Telephone batteries engineered for—

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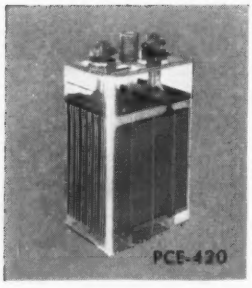
years of service

C & D PlastiCal®



If you want extra-long life from batteries in telephone service—be sure to specify C & D PlastiCal® batteries.

Here is the original lead-calcium telephone battery that provides at least 40% longer life than conventional telephone batteries. With C & D PlastiCal telephone batteries you get:

- **Reduced maintenance**—Electrolyte level can be checked at a glance; cells require 1/5 as much water as conventional batteries.
- **Lower in-place cost**—Rugged one-piece plastic case is 20% lighter than glass; reduces shipping and breakage costs.
- **Increased safety**—C & D's patented Saftee-Vent eliminates the chance of accidental explosions; serves as funnel for filling.

These plus many other benefits mean that in the telephone field, C & D is—

Your better battery buy!

Literature available

Write for complete description and specifications in C & D PlastiCal Bulletin T-528.

C&D BATTERIES, INC.

of Conshohocken, Pa.

SINCE 1906

SALES AND SERVICE OFFICES IN PRINCIPAL CITIES FROM COAST TO COAST

Hubbard Names LeVee Director of Engineering

CLARENCE H. LeVEE has been appointed director of engineering, research, and development for Hubbard & Co., and will direct a new and expanded research program for all Hubbard plants.

Arthur C. Westrom will supervise research and development activities

C. H. LeVEE

on electrical protective devices, Jules Mack on pole line hardware, and Robert Hartman on aluminum products.

Mr. LeVee joins Hubbard after three years with J. G. White Engineering Corp., New York, as senior electrical engineer and consultant to the Council for United States Aid in Formosa (Taiwan) China. Prior to his Formosa assignment Mr. LeVee was vice president in charge of engineering and construction for Fagan Electric Co., Little Rock, Ark.

Instrument Catalog

CONTACT meter-relays, versatile instruments that both indicate and control almost any physical or chemical condition that can be detected electrically, are described in a new 40-page catalog, No. 4-C, issued by Assembly Products, Inc.

The catalog supplies complete information for ordering meter-relays intended for use in original equipment or in self-contained control packages. Various circuits for providing different types of control action are discussed. Also included in the catalog are API panel meters and auxiliary control components.

STROMBERG-CARLSON

Transmitter

A DIVISION OF GENERAL DYNAMICS CORPORATION

News and views of Independent telephone people. VOLUME 6, NO. 3 • JUNE 1957

Assured progress the keynote as

Stromberg-Carlson dedicates new plant Facilities

All under one roof! The enlarged Telecommunication Division on Carlson Road, Rochester, N. Y., now contains over 800,000 square feet of manufacturing space.

The new Electronics Center in Rochester, New York, houses Research and production facilities totaling an additional 800,000 square feet of space.

Their vision realized.

Shown at ground-breaking ceremonies for new buildings in October, 1955 are (from left) Robert C. Tait, president of Stromberg-Carlson; Frank Pace, Jr., president of General Dynamics Corporation; the late John Jay Hopkins, founder and first chairman of the board of General Dynamics Corporation.

Confidence in the assured future of the telecommunications industry was voiced by all executives of General Dynamics Corporation who attended the formal opening of Stromberg-Carlson's five-million-dollar addition on Carlson Road and the newly-acquired research and manufacturing facilities at the Electronics Center.

In the full sense of the word this was a dedication: that the Corporation and the Stromberg-Carlson Division implement the dream of the late *John Jay Hopkins*, founder of General Dynamics Corporation, for a peaceful world community freed from poverty and want by the achievements of science. It was stressed that the programs which have been established will provide a solid basis for the Corporation's continuity and growth.

Last year, at the dedication of a laboratory which bears his name, Mr. Hopkins reminded those present that "the scientific and technical accomplishments of today are not the exclusive products of this generation. They are the result of the labors and the thought of countless individuals over the centuries . . . Thus it is incumbent on us not only to safeguard this precious heritage, but to enrich it with our own particular contribution and ensure its transference to our successors."

The established production of telecommunications equipment by the Stromberg-Carlson Division can now be accelerated through utilization of the new facilities available; in the field of pure and applied research, stimulation has been given to provide this generation with a richer life as better communication furthers the transfer of ideas, overcoming the present limitations of time and space.

New England Ramble . . . by the editor

Arthur Clark of Winthrop, Maine, shows two temporary "maintenance men" the fine points of XY Dial.

The whole thing started out as a College Tour, as the hour of decision in such matters crowds ever closer. Hereditary inclination, plus the opportunity to see members of the family still guarding ancestral camp fires, naturally directed our course toward New England. On Good Friday we wedged ourselves among the baggage, thankful for the added speed and comfort of express highways.

To the native-born, New England always seems different. A country bake shop, grinding flour from its own water wheel, furnished still-warm bread for our supper. Winsted, Conn., decimated by floods in '55, courageously had converted the half of the city which was destroyed into a riverside park. The bustle of booming business, hemmed by hills unchanged by man or time, indigenous to the section.

Hartford, preserving its Queen City atmosphere as it spreads out like an oil-slick; New London, Conn., with higher education possibilities for both the young lady and the lad, as well as the Electric Boat division of General Dynamics Corporation, where atomic secrets must still remain barred to the public. Boston, Mass., skirted, rather than seen. And at the end of another day, a Maine country home on the shore.

Winthrop, Maine, is near Waterville — or perhaps it should be put the other way around, as the former is the headquarters of the Lewiston, Monmouth and Greene Telephone Company, while the latter boasts principally a newly-constructed college campus.

East Winthrop is already converted to XY Dial, and, characteristically, the station count is climbing faster than predicted. The young lady, who had had several opportunities to see XY Dial in action, enjoyed playing "hostess" for her cousin.

We were sorry to miss Mr. John Connor, manager, who was attending a coordinating meeting relative to the conversion of the larger exchange at Winthrop. Arthur Clark, whom we had met at the XY Training School in Rochester, and Mr. Jenkins, wire chief, told of progress already made — with the principal story still to come.

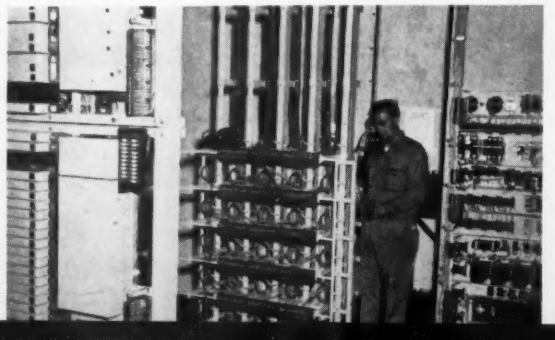
Mr. Harold Carroll is manager of the Saco River Telephone Company at Bar Mills, Maine. Simultaneous cutover to XY Dial was made at both Bar Mills and Waterboro exchanges.

Bar Mills, Maine — with a brand-new telephone facility that brings justifiable pride to the town — lay square across our return route. Mr. Harold Carroll, who took on the big job of managing this company at the onset of the modernization program, has a legal background covering the utility field as an asset. Both Mr. and Mrs. Carroll have been stimulated by the new contacts made since they have been part of the telephone fraternity.

But appointments with deans of admission must be kept, and the rest of the trip falls outside the principal interest of these pages.

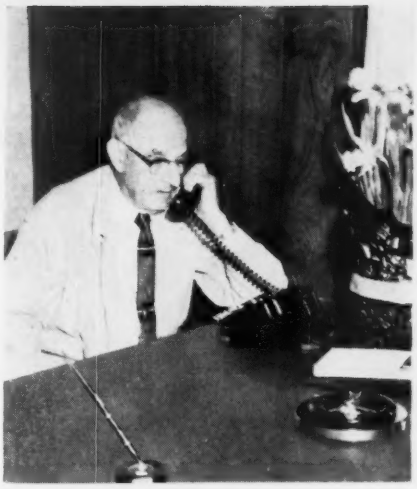
John Connors (left), manager of the Lewiston, Monmouth and Greene Telephone Company, watches Thomas E. Delehanty, chairman of the Maine Public Utilities Commission place first call over East Winthrop XY Dial equipment. Arthur Clark, equipment supervisor, at right.

It won't be long now until this manual board now serving Winthrop, which has been extended to the limit, will be replaced by dial equipment.



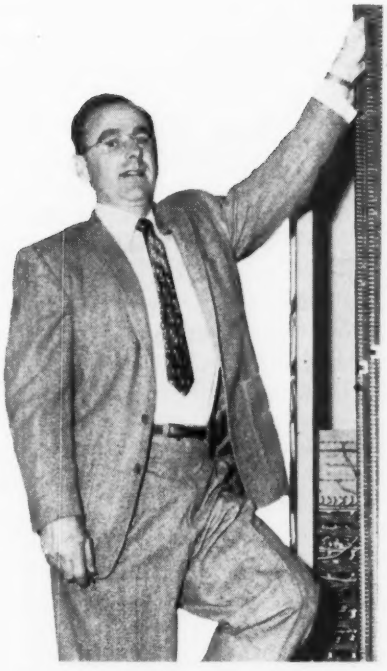
Clinton Sargent, plantman for the Saco River Telephone Company, attended XY Training School — competently handles the situation at newly-opened offices in Bar Mills and Waterboro, Maine.

We certainly enjoyed our visit with Mr. Carroll and left Bar Mills convinced that size of town has nothing to do with quality of service to the local subscribers.



Mr. Henry B. Melick, father of the company's manager, places first dial call after conversion, realizing his dream of bringing dial service to the West Liberty community.

Dr. L. A. Royal, member of West Liberty Telephone Company board of directors, cuts off old manually operated switchboard.



Mr. Filmore Melick, manager of the West Liberty Telephone Company, proudly cuts in new XY Dial Service.

A dream come true:

Dial for West Liberty, Iowa

It was a moment long anticipated. The strenuous months of waiting and hard work, climaxed into a bustle of activity, had brought XY Dial Service to the community of West Liberty, Iowa.

Immediately after the cutover, there was a brisk flurry of telephone calls indicating the eager anticipation of subscribers to try out this new XY Dial System. Pride in accomplishment was on the faces of all, particularly those whose labors had made it possible.

A moment of unexpected humor helped relax those involved as Mr. Henry B. Melick, veteran manager of the West Liberty Telephone Company, began to place the first call after the conversion to dial service. Because all new numbers had been assigned, he had to look up his own telphone number.

Others present at the cutover were: Mr. Ivan Noland, Dr. L. A. Royal and Mr. Henry Melick, directors of the West Liberty Company; representatives of the Northwestern Bell Telephone Company; Mr. Norman Harvey and Mr. R. Porter, representing the Eldridge (Iowa) Telephone Company; Mr. Everett Hesser, Iowa City, a former employee of the West Liberty Company; W. J. Pfaender, Chicago, and W. W. Blair, Knoxville, Iowa, Stromberg-Carlson Sales; and R. J. Smith and Jerry Dinsmore, Stromberg-Carlson installers.

Two most interested spectators, representing the Iowa-Illinois Telephone Company, included Mr. F. C. Anderson, New London, Iowa, and Mr. Frank Pearson, West Branch, Iowa, both of whom had experienced many such cutovers to XY Dial Service for their company.

Special arrangements were made during the installation of the dial system for handling fire alarm calls. A system, designed to meet requirements peculiar to the community, assures positive contact with members of the fire department, releases held lines for regular service after contact has been made.

Public inspection of the new West Liberty facilities were planned to take place shortly after the cutover.

XY Dial addition complements already pleasing exterior.

John Bird (foreground) explains test specification which he has prepared to William Mahon, circuit plate inspector.

Gordon Pearce (background) directs Barrie Brightman — one of Mr. Pearce's group in Electronic Switching — in pulse tests as applied to multiplexing.

Robert M. Seibert (right), directe with new arrival George Jowi . . . as well as professione

Friends from

"Wouldn't it be simply smashing if we could take in . . .!" And wouldn't you, too, be riding Cloud 9 if — like Reg Berry and Joan Pocock — you were planning your wedding trip?

Interests differ with age. Eva Jowiec, for instance, can hardly wait to learn who is phoning; Gillian Pearce is delighted with opportunities for good music in their adopted city.

"Everyone we've met has been so friendly and helpful in making the adjustment to our new way of life in the United States; we feel as if we've lived here all our lives!"

Such is the typical feeling of our new friends from England — engineers and their families who have immigrated to this country and are now working at Stromberg-Carlson. The natural anxiety in giving up home and life-long associations has been counteracted by the welcome excitement of creating a new home and establishing new friendships amidst a warmhearted people so representative of America.

It would be impossible in these pages to include a story on each of the more than thirty top engineers who have chosen to cast their lot with America and Stromberg-Carlson without making each so brief as to be meaningless. Therefore — and with the calculated risk of offending through omission — certain families were interviewed as representative of the differing professional and family backgrounds of the group.

A 20-year veteran of telephone design and development in England, Mr. J. Gordon Pearce and his family undoubtedly felt the greatest anxiety at the thought of leaving an established home for an untried life in the United States.

But things have been going rather smoothly for the Pearces. Mr. Pearce, who was engaged about seven months ago as a Group Head of the Electronic Switching Section, Telecommunication Engineering, has been promoted to Assistant Section Head. Mrs. Pearce has found her greatest interest in observing the children as they enjoy a less formal phase of their education. Unlike separate private schools for boys or girls commonly found in England, both James Anthony, 17, and Gillian, 14, find themselves in the swirling eddy of a large public coeducational school in Rochester. Quite a change and a challenge for two young grownups!

Not as young as the junior Pearces, yet with an even greater challenge confronting them, are Reginald Berry and Joan Pocock. Reg and Joan announced their engagement in England before Reg left to join Stromberg-Carlson. Once here he made arrangements to sponsor Joan and call her to Rochester. Reg is a Systems Engineer and Joan is a secretary in Electronic Switching, working closely with Mr. Pearce.

Still in their twenties, they are looking forward to an exciting life together once marriage plans are complete. Yet, as anyone knows who has ever attempted to plan a wedding, there are many details involved. It's no exception in this couple's case; in fact, not having their families here to rely on for help, has forced them to set a June date with much uncertainty. But by the time you read this, they may have been married. Both have tried to enjoy a normal life between "planning" sessions as Reg, who is a professional photographer by avocation, still finds time to take pictures when he and Joan are not on a motor trip discovering new and exciting places in their adopted country.

direct... technical personnel, counsels ...e Jowi... housing, attractions of the city ...fession... ...ignment.

...om across the sea

Eyebrows were lifted momentarily when the following statement was recently made by one of our new arrivals: "This country is for the Birds — the *John* Birds, that is!"

Truer words were never spoken, as this family of four has embraced the American Way of Life with exhileration. Learning to do things the American way was part of the dream before leaving England. This dream became reality, not only in their private life, but also at work and play.

At work Mr. Bird, who is a Test Equipment Engineer, enjoys the informality in everyday relations. Mrs. Bird is even more emphatic and has given some definite opinions about her new country:

On America — "I love it. We're here permanently and I don't ever want to go back. My mother has joined us and is also planning to stay here."

On Americans — ". . . How very, very generous and helpful the American people are. The little things they do and the way they show appreciation: I was absolutely shattered."

On Religion — "In America it's a thing to be enjoyed; in England it's a thing to be endured. To me religion is a way of life. You Americans live your lives fully . . . and that is religion."

On Theater — "You have much better acting here. It's dreadfully frustrating in England. My brother is a wonderful actor, but talent isn't recognized in England as it is here. There you have to have wealthy parents and distinction to get a part."

Mrs. Bird speaks with authority on this last point. She is actively interested in amateur dramatics and has already produced a play since her arrival.

One of the more recent arrivals from England is Harold W. Clark with his wife and daughters, Carol Ann, almost 5 and Jill, 1. Tall, unassuming, Harold Clark has accepted his roll as Systems Engineer at Stromberg-Carlson with the same enthusiasm as he has the new home for his family. About the only thing that disturbs him is driving on the right side of the road.

"It's so easy to slip back into the natural habit of driving on the left," he says.

Holder of six patents in Telecommunications, covering carrier and coaxial systems, Harold Clark's quietness belies the fact that he loves a satisfying debate or a good game of soccer or cricket.

Working at the desk next to Harold Clark, Geoffrey Clamp, who is usually not so outspoken, confesses: "We (he and his wife) feel fortunate that destiny brought us here to Rochester rather than to some other center of the telephone industry."

The Clamps like the hometown atmosphere usually so difficult to find in a city the size of Rochester. The appeal of a metropolitan center is not for this young couple.

A scholar since the early 1930's, Geoffrey Clamp has spent much of his time pursuing studies at night while working during the day. He's received endorsements to certificates (diplomas) in applied mechanics, heat, light and sound; a credit to his ambition and perserverance.

George Jowiec is probably the one person who most appreciates living in the United States — but he won't come right out and say so.

Born in Poland, George was in Warsaw in 1939 when the Germans occupied the city. He escaped during the Russian occupation of Warsaw but was later arrested as a "German spy" and deported to Siberia where he organized an escape. Through "sheer luck" he eluded death.

After Russia joined the Allied forces, Jowiec received "amnesty," joined the Polish forces in Russia and was evacuated to Persia with the British. He saw front line service as a 2nd Lieutenant in the intelligence (enemy interception) branch of the Polish Forces under British command.

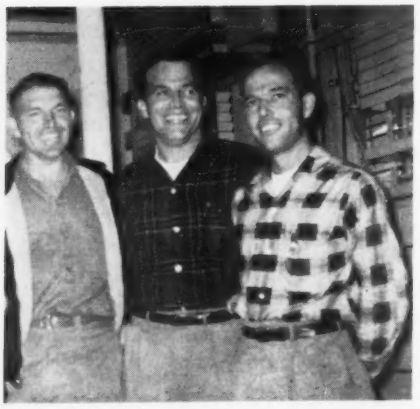
As an ex-serviceman, he obtained a college grant from the British government and majored in electrical engineering in England. He later became a naturalized British subject. Here he met his wife, Natalie, also an emigre from Poland.

We welcome these new-found friends to America with the same enthusiasm in which they have accepted us and our way of life. They have not come empty-handed; their gifts and professional experience, as well as their refreshing outlook, will be a tremendous asset to the country of their adoption.

Whether it's a ride in the car (Mr. and Mrs. Geoffrey Clamp) or an afternoon walk (the Harold Clark family), it's an adventure.

And of course there's nothing like a good tea, especially when it permits you to make new friends.

Part 2: Installation Foremen



Long-time resident.

J. T. Clark (center), foreman of the multi-exchange dial program for the Grand River Mutual Telephone Company of Princeton, Missouri. Mr. C. W. Chastain manages this group serving northern Missouri and southern Iowa.

Installation foremen are where you find them. In this continuing series we shall recognize a few more of these men who are constantly on the move, completing the modernization of our Independent Companies. The locations beside each man are — naturally — just past history; they may pop up anywhere and perhaps your exchange is next on the list.

With so many telephone companies trying to obtain the obvious advantages of XY Dial as quickly as possible, there is a terrific scheduling problem involved in supplying personnel trained to company standards for nationwide coverage. One obvious answer is to reduce non-productive travel time to a minimum; but at the same time there are many advantages in having a man specialize in installations of the same general size and type.

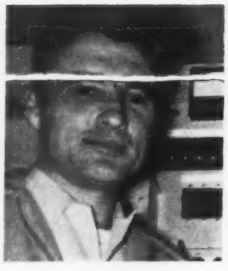
Whoever comes to install your equipment, he will bring to the job a demonstrated skill, and the resolve to see that your completed exchange fully meets your expectations.

"Nationwide" is not just a copy-word. In all states where Independents are operating, Stromberg-Carlson installers have worked or are presently being scheduled.

Culver, Oregon

Corbett, Oregon

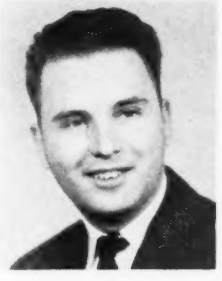
K. E. Sander



Purdy, Missouri

McKensie, N. D.

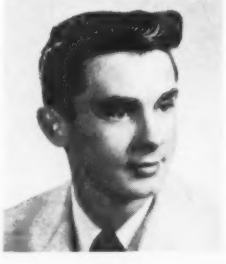
C. Wilson



Grand Bay, Ala.

Fairbanks, La.

W. H. Whitlow



Dos Palos, Calif.

Fairfield, Iowa

H. L. Ollig

Recently promoted.

Richard Davidson, who supervised the installation of Rupert, Idaho (at right) and Lexington, Virginia, will continue to win friends for himself and his company now that he has been promoted to Service Engineer.

More roo

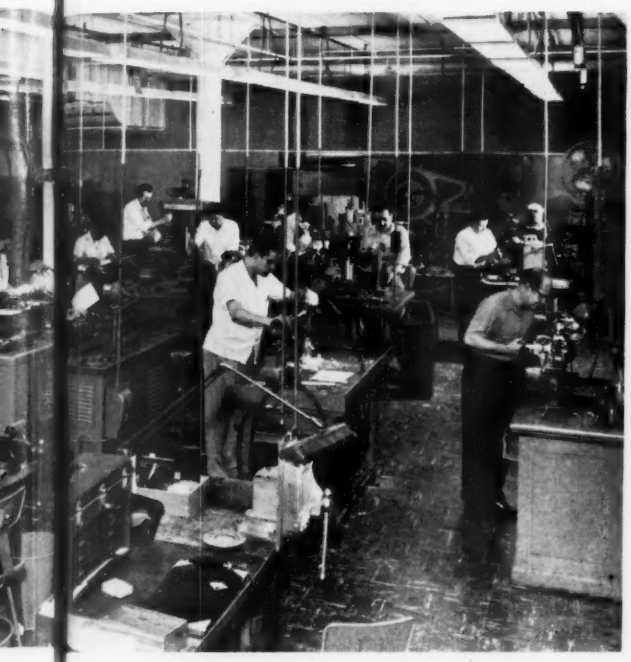
For new

If you have visited Stromberg-Carlson this May or June you are well aware of the strategic departmental moves following the occupation of our enlarged plant facilities. This article on the Model Shop and its personnel is one of several which will acquaint our customers with current progress in manufacturing efficiency.

"We like our new home," Forrest R. Jones, Model Shop Foreman explains, "but it makes no difference where we're located; it's the advanced knowledge and skilled dexterity of craftsmen like Ernest LiFebre and Sydney Proctor — anchormen — who have made the Model Shop what it is today."

The new home mentioned by Forrest Jones (or "Jonsey" as he likes to be called) is the new location in the recently completed addition to the main Stromberg-Carlson plant, where for the first time adequate space has been found for this important engineering function. Assistant Foreman Ernest LiFebre, who has been with Stromberg-Carlson for 33 years, and Sydney Proctor, a veteran of 22 years with the company, according to "Jonesy," should be given

...tter facilities
...ew ideas to take form



These highly-skilled men, working in adequately spaced Model Shop, give form to new ideas.

Right picture: Sydney Proctor (right) works with Night Group Leader George Fox in assembly of new parts of wall-type telephone, while (picture below) Model Shop Foreman Forrest Jones (left) and Ernest LiFebre discuss printed circuits.

much of the credit for the success of the Model Shop.

"Their attitude in helping and training younger men makes them a real asset no matter where we are."

The selection and layout of their new location was largely the plan of Floyd Shares, Production Engineer, who coordinated the movement and placing of some 30 machines in all sizes and shapes. Moving operations began on Monday, April 15; the Model Shop was completely set up and operating at 100% capacity by the following Monday. It sounds easy, and it was. Careful planning made it that way.

The same care in planning operations in the Model Shop makes this department unique.

With a complement of about 20 men ranging in Model Shop experience from three months to veterans like LiFebre and Proctor, these "Idea" men work closely with design and development engineers in giving substance to new ideas that materialize eventually as improved products for the telecommunication division.

Usually an engineer comes to the Model Shop with an idea for redesigning and improving just one part. A discussion with one of the instrument makers results in a quick sketch of the new part. From this sketch the part is made, using one or more of the grinders, lathes, punch presses or layout machines. If the new design is accepted by the production department and others concerned, then an official drawing is made from which a tool, ready for use in production, is manufactured.

There are many times, however, when an entirely new concept in communications equipment is carried to completion in the Model Shop, beginning with a germ of an idea straight through to a mold or tool ready for use in production.

The development of the new Stromberg-Carlson 1500 Series Telephones by Sydney Proctor, working with numerous engineers, is just one example of a new design in telephone equipment.

Proctor began with an engineer's concept of what the new telephone should look like and a piece of Tenite plastic. Using his fund of knowledge and skill, Proctor actually sculptured the housing and handset to such perfection, that one could not tell the difference between his original and one taken later from the production line.

It took Proctor two weeks to perfect an acceptable design which not only looked low and graceful but also allowed enough functional space under the housing for all necessary components.

"I can't remember the number of changes made from the original sketch," Proctor relates, "but almost every one concerned a change in thousandths of an inch as designs and dimensions of component parts were revised."

The patience, skill and imagination of these men is understandable as an average of 15 years experience at designing, developing and finishing a part unassisted usually qualifies an experimental mechanic for the top level position of instrument maker in the Model Shop. Experimental mechanics average about seven years experience in tool making, design and development. Advancement in grade is based on individual merit and accomplishments and not necessarily on time spent in a particular grade.

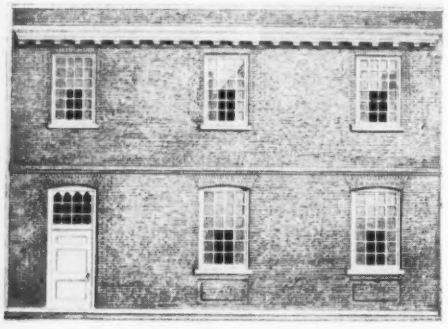
An instrument maker himself, Forrest Jones has been Model Shop Foreman for nearly a year and instrument maker with Stromberg-Carlson since 1951.

Highly-skilled men plus new and improved working conditions is a combination hard to beat. The result is obvious in the continued quality of Stromberg-Carlson products.

Sam Nixon, president of Chatauqua and Erie Telephone Company (center), looks at architect's drawing of new building as his sons Fred (left) and Rodney stand by.

Chautauqua & Erie Telephone Co. takes growing pains in stride

Growing pains? The Chautauqua & Erie Telephone Corporation, Westfield, New York, has been experiencing growing pains for the past ten years, has taken it as a necessary part of progress, and certainly doesn't intend to stop growing.



Architect's drawing shows proposed Westfield, New York, exchange.

In that time the company has more than doubled in size so that today it has over 6,000 telephones, serving Brocton, Findley Lake, Mayville, Ripley and Sherman, as well as Westfield, in an area of about 250 square miles.

In its plan of continuing expansion and improvements, the company, under the leadership of its general manager, S. F. Nixon, Jr., has recently launched a program which includes conversion of the several exchanges to XY Dial Service, construction of an up-to-date two-story fireproof building (at a cost of about $100,000), and a complete XY Toll Ticketing System to provide customer toll dialing between all six exchanges and to other nearby points in Chautauqua County.

Actual cutover to XY Dial Service will take place late this year or early next year; customers will begin dialing their own toll calls, under completely automatic timing, charging and billing procedures, in about one year.

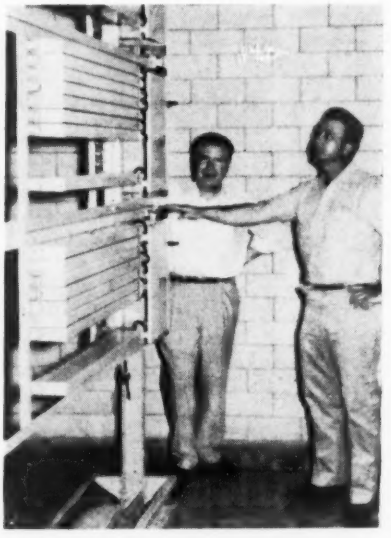
Garwood, Texas now XY Dial-ing

Progress is the by-word in Texas, even in the smaller communities. Such is the case in Garwood, Texas, located on the Colorado River — Texas, that is! —halfway between Austin and the Gulf.

Recently a 160 line XY Dial exchange was placed in service, modest in size, but equal to the best there is.

To provide this improved service for his customers, Mr. Erwin Stienke, President and General Manager of the Garwood Telephone Company, received both financial and engineering assistance from the Stromberg-Carlson Credit Corporation to build a new exchange.

The new building houses the XY Dial equipment and a Stromberg-Carlson 3-channel 501 Carrier System. That's progress!



Mr. Erwin Stienke, Garwood Telephone Company General Manager, points with pride to new XY Dial equipment as Carl Price, Stromberg-Carlson, looks on.

If it's fishin' you're wishin' go ahead!

but if you need us,

Pick up a phone

Original drawings by R. Smithwick, Engineering

While most of us take a well-earned vacation from July 1 through July 14, a skeleton crew will remain on hand to handle your emergency requirements.

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THE BACK OF THE BOOK

By JOHN G. REYNOLDS

"110 Poles For $33.00"

DID someone say the cost of providing telephone service has not increased? The following letter was located in the files of the Glen Telephone Company which was merged into Upstate Telephone Corporation of New York in 1934 and later changed to General Telephone Company of Upstate New York, Inc.

November 21, 1899

Mr. Edward
Dear Sir:

Your men were here today and your foreman told me I could make out my bill and send it along with him so will do so

Poles 110 @ 30¢	$33.00
Drawing 96 @ 12½	12.00
Sinking & cutting 22½ *days*	28.13
	$73.13

The poles cost me more than you at first ordered to pay so I told you I would draw a load for nothing. It took 111 *poles. We pay for* 110 *and I drew* 15 *for which I make no charge.*

The men tell me I have set the poles well, some are some smaller than were ordered but are butt poles.

Trusting this will be satisfactory.

I am,
Respt.
(Signature not clear)

According to the editors of New York General News, the cost of 110 poles today (20') is $830.50 in comparison with the $33.00 paid in 1899 and the cost of 110 poles including the cost of setting today is $2,640.00 in comparison with the $73.13 quoted above.

Rural Residence Service rates at the time the letter was written were $1.00 per month. Four-Party service is now $2.75 per month.

New Prefix

THERE'S a customer, we gather from the *Silent Ring*, LaGrange, Ill., Office newspaper, who thinks IBT has gone into the soft drink business. At any rate, when her call continued to go astray, she protested violently when told she was calling the wrong number.

"The operator told me it was Pepsi-Cola 6-," she insisted.

"Confusion

OUR Canadian correspondent tells us residents of Calgary are catching on to the new telephone dialing system, but not without some confusion.

The city recently switched to the two-letters, five-numbers system and the Albert Government Telephones office report these among hundreds of queries received in the early going:

"Can you tell me if I am supposed to ring the letters AM only in the morning?"

"Please tell me how to ring the dash in the telephone numbers. I can't find it on my dial?"

"No Mail Week"

WAGS AT THE White House have come up with all sorts of ideas for Postmaster General Summerfield to save money.

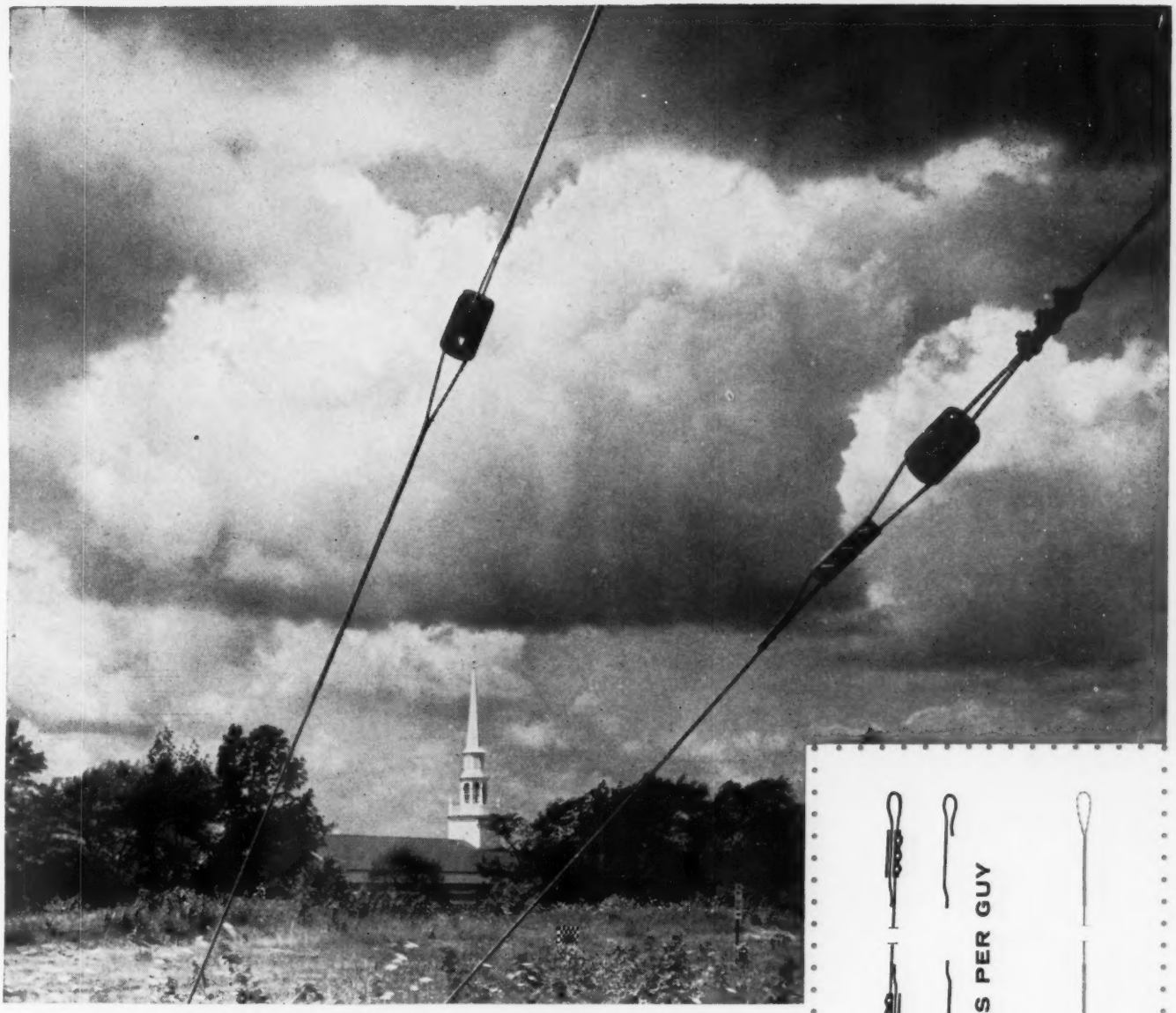
Do-it-yourself stamps, for one thing. The plan is simplicity itself: Leave the mucilage off of stamps and let the mailer apply his own.

Another: sell 3-cent stamps only in sheets of 100, uncut and unperforated. This would save the cost of perforation and simplify sales procedure.

The savings here, however, are dubious because the plan might promote an even heavier mail volume. Too much mail is the basic trouble in the postal service.

Probably the most logical of the silly ideas bandied about the White House corridors the last few days was declaration of a "No Mail Week." Nobody would send letters for a week, reducing mail volume and departmental costs at the same time.

STAR BOARDER!



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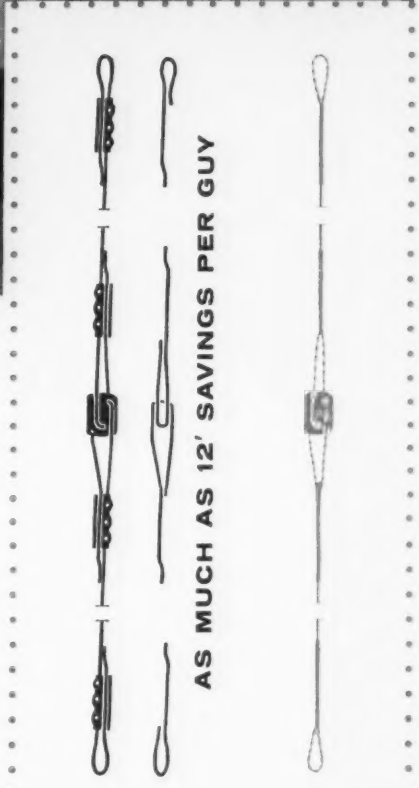

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